Remarks
ON
ARTERIO-VENOUS ANEURYSM.

Made at a Symposium[1] *on the Subject at Radcliffe Infirmary, Oxford, on March 26th, 1915.*

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GENTLEMEN,—Better than any other disease aneurysm illustrates how borderless are the boundaries of medicine and surgery. Here am I talking on the most surgical of all its aspects, while very likely not far away a surgeon is practising the best possible prevention against internal aneurysm in giving a syphilitic patient an injection of salvarsan! Aneurysm has been a medico-chirurgical affection ever since some bungling young "minutor" first nicked the brachial artery in performing venesection. One of the earliest and most interesting references in literature is to an instance of this kind. Galen was called in consultation by a young and inexperienced surgeon who had opened the artery at the bend of the elbow instead of the vein, and the blood spurted out "clarus, rubens, lucidus et calidus."

"I took in the situation at once; there happened to be an elderly physician with me, so we prepared a medicine, viscid, conglutinable, and obstructive, and placing it strongly against the lips of the wound bound over it a soft sponge. The surgeon who had opened the artery wondered, but said nothing. When we went out"—note the professional touch!—"I said to the surgeon that he had opened the pulsating vessel, and charged him not to dress the wound before the fourth day, and not without me."

The cure was complete, and Galen remarks that this was his only successful case of the kind, as in all others aneurysm had followed. This account, taken from Symphorien Campegius "Claudii Galeni Pergameni Historiales Campi, Basilae," 1532, p. 43, is doubtless of the case referred to in the "Methodus Medendi."[2] The only other references to aneurysm in Galen are in the "De Tumoribus praeter Naturam"[3] and in the "De Curandi Ratione per Sanguinis Missionem,"[4] in which he refers to the possibility of gangrene.

HISTORICAL SURVEY.

Rational surgery was one of the gifts of the Greeks, but in the 800 years between Hippocrates and Oribasius few names have survived specially associated with this branch of medicine. Who among us off-hand could recall more than two or three in addition to Hippocrates and Galen? Yet in this period scores of important schools flourished with great teachers of surgery, men honoured in their generation and the glory of their times. As one reads the partial list in Haller's "Bibliotheca Chirurgica" and scans the few golden remains of their writings fortunately preserved by encyclopædists such as Oribasius and Paul of Ægina, the truth of Sir Thomas Browne's remarks comes home: "Who knows whether the best of men be known, whether there be not more remarkable persons forgot than any that stand remembered in the known account of time?" Two of these comparatively unknown men created the surgery of arteries, Rufus of Ephesus and Antyllus, the Cosmas and Damien of Greek surgery.[5]

Rufus of Ephesus.

To generations of practitioners unworthy to hand him ligatures Rufus of Ephesus (Reign of Trajan, early part of second century A.D.) was known by the "pilulæ Ruffi," "the pills I would not be without"—"pilulæ sine quibus esse nolo"—still in the British Pharmacopœia as the pill of aloes and myrrh. In the brilliant Ionian profession of the early days of our era Rufus doubtless had predecessors and teachers, but he stands out a strong, clear figure, a great "magister chirurgiæ," a title justly earned by his remarkable contribution to the surgery of hæmostasis. We know it only through a section in Aetius, a sixth-century physician.[6] Nothing is lacking in a description, which might be transferred to any modern text-book—digital compression, styptics, the cautery, torsion, and the ligature—only I am sorry not to find, as is sometimes said, a description suggestive of arterio-venous aneurysm, though he speaks of the possibility of traumatic aneurysm.

Through the Arabians the name of Rufus was on the lips of every mediæval physician, and we find him among the favourites of Chaucer's well-read Doctor. In one of the earliest and most beautiful of medical manuscripts, the famous "Juliana Anicia Dioscorides" (A.D. 525), of the Vienna Library, he is figured with Galen, Hippocrates, and others.

Antyllus.

Upon the other great surgical figure of antiquity, Antyllus, so blindly has oblivion scattered her poppies, to quote Sir Thomas Browne again, that not a fact of his life is known; yet through the mists of 18 centuries he looms large as one of the most daring and accomplished surgeons of all time. A resector of bones and joints, one of the first to perform tracheotomy, the founder of the surgery of fistula, a successful operator upon cataract, and we may say the creator of the surgery of the arteries—these are among his known achievements. His remains are chiefly in the works of Oribasius, the physician and friend of the Emperor Julian.

Nowhere are we impressed with the note of directness so characteristic of the Greek (see R. W. Livingstone's "Meaning of the Greek Genius," second edition, 1915) as in the brilliant account given by this author of aneurysm, of which he was the first to recognise two forms—one by dilatation, the other following wound of the artery. So far as I can gather, he was also the first to describe the thrill or bruit so characteristic of the latter form. No ancient writer has anything like the same accuracy of pathological description, and you may search the surgical literature for centuries before there is found such a gem as the account of his method of operation still in use, and by which his name has been permanently enshrined. Not finding one in English, I asked Mr. Livingstone, of Corpus Christi College, to give us a complete translation of the fragment.

About Aneurysms (from the works of Antyllus[7]*).*

There are two different kinds of aneurysms. The one kind occurs when there is a local dilatation of an artery (this

[1] In which Colonel Dodds-Parker, Major Mallam, and Captain Bevers took part.

[2] Linacre's edition, 1517, f. lxii., v.

[3] Junta, fifth edition, 1576, iii., p. 84.

[4] Ibid., vi., p. 21.

[5] These practitioners, who became the Christian saints of surgery, suffered martyrdom in Cilicia in the third century. In their Western Mother Church, on the Roman Forum, I have seen the little parcel said to contain the instruments with which they performed the most famous operation in hagiological surgery, substitution of the healthy thigh of a just-dead man for one that was gangrenous.

[6] Tetrabiblos, lib. xiv., cap. 51.

[7] Oribasius, iv., p. 52 (ed. Daremberg).

was the origin of the name aneurysm or dilatation). The other kind arises from the rupture of an artery and the discharge of the blood into the flesh beneath it. Aneurysms due to the dilatation of an artery are longer than others; those due to a rupture are rounder. In the former there is a thicker layer of tissue; in the latter you can hear a certain crepitation if you press them with your finger; while in aneurysms due to dilatation there is no sound.

It is foolish to follow the practice of the ancient surgeons and decline to treat any aneurysm, but it is dangerous to apply surgical treatment to all types. So we will excuse ourselves from treating aneurysms in the armpit, groin, and neck on the ground that the vessels are large and that it is impossible or dangerous to isolate and tie them. We also decline exceptionally big aneurysms, even if they occur elsewhere. But we will operate as follows on aneurysms in the extremities, the limbs and the head.

If the aneurysm results from dilatation, we will make a straight incision in the skin the whole length of the vessel; then, after separating the edges of the incision with hooks, we will carefully sever all the membranes between the skin and the artery. Then pushing aside with blunt hooks the vein adjacent to the artery, we will expose the dilated portion of the artery on all sides. Next, we will introduce the head of a probe underneath, and, lifting the aneurysm, insert along the probe a needle with a double thread, so that it passes beneath the artery. We will cut the thread at the eye of the needle, making two threads and four ends of thread; then, taking the two ends of one of the threads, we will pass them gently to one end of the aneurysm and tie them with precision. Similarly, we will pass the other thread to the opposite end of the aneurysm, and then tie up the artery, so that the entire aneurysm lies between the two ligatures. Then we will lance the aneurysm with a small incision at its centre; in this way its contents will all be evacuated without any danger of hæmorrhage. Those who tie the artery, as I advise, at each extremity, but amputate the intervening dilated part, perform a dangerous operation. The violent tension of the arterial pneuma often displaces the ligatures.

If the aneurysm originates in the rupture of an artery, isolate with your fingers as much of the aneurysm as you can, including the skin. Then below the isolated part introduce a needle with a double thread of flax or of gut; after passing it through cut it at the needle's eye, forming two threads. Take hold of the two ends of one of these and pass it to the right, there tie it tightly, so as not to slip. Pass the other end similarly in the opposite direction—to the left. If there is any fear of the threads slipping, pass a second needle with a similar double thread through the same spot, intersecting the first thread and crossing it in the form of the letter χ (chi). Cut the threads as before, and tie them like the first ones, so that four threads form the ligature. Then open the tumour at its top, and, after evacuating the contents, remove the superfluous skin, leaving the part tied by the threads. In this way the operation is effected without hæmorrhage.

And I must read Mr. Livingstone's comment:—

It certainly is a beautiful piece of lucid writing. I felt that if I was alone on a desert island with someone suffering from aneurysm, and the tide had washed ashore sufficient ἀγκιστρα, &c., that I shouldn't have minded trying the operation. And Antyllus had real literary power. What an admirable phrase is ἐκπτύεται, the "spitting out" of the ligature by the throbbing artery: I don't think you can get it in English, and I fell back on a lame substitute, "displaces."

Not unjustly does Paul Broca in his great monograph, "Des Anévrismes," claim that not only did Antyllus create operative medicine but the pathology of aneurysm: "À chaque ligne on reconnait l'écrivain qui parle de ce qu'il a vu, de ce qu'il a fait."

Decay and Revival of Vascular Surgery.

Aetius in the middle of the sixth century describes the method for cure of aneurysm at the elbow, known later as that of Anel (1710), ligation of the brachial artery three or four fingers'-breadth below the axilla, followed by opening the sac, which was allowed to heal by suppuration. A curious error of Sprengel has led to the connexion of the name of Philagrius, a fourth century surgeon, with this operation. In the fragments of this writer given by Aetius aneurysm is not mentioned, but Sprengel never noticed that the extract on aneurysm which follows directly after one upon ganglion by Philagrius did not belong to this author but to Aetius himself.

A casual perusal of the fragments of the Greek surgeons of the first three or four centuries of our era as given in Gurlt's "Geschichte der Chirurgie" gives the impression of a great and fruitful period with scores of men whose qualifications were those demanded by Thomas Fuller for the good operator—the eagle's eye, the lion's heart, and the lady's hand. Then came the tragedy, the death in the West of the science of the Greeks. The Church took over their philosophy, the Arabs absorbed much of the best of their medicine and added to it, but surgery as a progressive science and a successful art died with its founders, the great Greeks of the Græco-Roman Empire. So far as the surgery of arteries is concerned we might take a jump of a thousand years or more were it not for an Arabian, Albucasis of Cordova (tenth century), who wrote a famous surgical treatise, of which we have in the Bodleian the two earliest manuscripts. A young scholar of Wadham and student of Christ Church, John Channing, in 1778 issued from the Clarendon Press a beautiful edition. The description which he gives of aneurysm with its treatment is practically that of Antyllus. He notes the stridor to be felt, which indicates that he was probably dealing with the arterio-venous form.

In vascular surgery the men of the Middle Ages and of the Renaissance, Henri de Mondeville, Guy de Chauliac, and even Ambroise Paré, were blind followers, who never even approached the position of their masters. Not much more than a century has passed since men of the John Hunter type took up vascular surgery where Rufus and Antyllus had left it, and only to this generation of experimental surgeons, such as Eck, Ballance, Matas, J. B. Murphy, Halsted, Carrel, and Guthrie, could the best of the Greeks go to school. You may think perhaps, that I am scarcely just to the great mediæval surgeons, particularly to such a master as Ambroise Paré, who reintroduced the ligature, but in vascular surgery, the touchstone of the position of the art, they never wholly regained what the profession had lost.

Our modern knowledge dates from William Hunter, in whose "Medical Observations and Enquiries,"[8] in a paper on Aneurysm of the Aorta he asks, "Does it ever happen in surgery when an artery is opened through a vein that communication or anastomosis is afterwards kept up between the two vessels?" He then describes, in a case following bleeding, the swelling, enlargement of the veins, and "a tremulous jarring motion" strongest at the part that had been punctured. In a subsequent paper, 1761,[9] he described two cases very fully, and recognised the enlargement of the arteries and of the veins and the characteristic hissing noise "as if there was a blast of air through a small hole and interrupted, answering precisely and constantly to the stroke of the heart or diastole of the artery."

It is true that in the seventeenth century Sennertus, the distinguished Wittenberg professor,

[8] London, vol. i., 1757.

[9] Further Observations upon a particular Species of Aneurysm, Medical Observations and Enquiries, London, 1761.

noted in this form of aneurysm the characteristic thrill which he compares to the boiling of water, "quasi bullientes aquae," not only palpable but audible, as if the vital spirits were passing through a narrow orifice.[10]

RARITY OF ARTERIO-VENOUS ANEURYSM.

It is remarkable how few specimens of arterio-venous aneurysm of the external vessels are in the museums of this country. I have only been able to get references to some half dozen cases. One is astonished not to find any in the Army Medical Museum, Millbank, or at Haslar or Greenwich. Nor is there an example in William Hunter's Museum at Glasgow. The Royal College of Surgeons of England has only three, including a recent uncatalogued one sent by Sir G. H. Makins. Its most remarkable specimen was sent in 1867 by Dr. Beaumont, of Toronto, an old teacher of mine. I was not a little surprised and greatly pleased to find a pathological memorial of this fine old St. Bartholomew's man, a fellow pupil of Paget, who went out to Toronto in the early "forties" and became professor of surgery in the newly founded King's College. It is an admirable specimen as illustrating the late changes in the veins. The case is fully described by Beaumont in the *Medical Times and Gazette* for July, 1867. A man, aged 45, had 11 years previously been stabbed in the upper part of the thigh. There was a very large pulsating tumour in the upper part of the right thigh, fully six inches in extent in either direction and extending nearly to Poupart's ligament. The patient died under chloroform, which was administered for the purpose of ligaturing the external iliac artery. The specimen shows a venous sac as big as a small cocoanut, measuring 14½ by 12½ inches, very thin walls containing some old laminated fibrin, and the walls were in places calcified.

The truth is, this is not a country of brawls and dirks, and pistol wounds are rare in civil life. It is strange that no specimens found their way to the museums from the South African War. The Army Medical Museum, Washington, has only two examples (Lamb).

The rarest of all forms, arterio-venous aneurysm, is occasionally met with in the medical clinic as when a small aortic aneurysm opens into the superior vena cava, while on the surgical side trauma is responsible for 99 per cent. of those connected with the external vessels. Until the recent wars stab wounds accounted for the large majority of cases, but in the Japanese, the South African, and the Serbian wars the high-velocity bullet heads the list of causes.

PERSONAL EXPERIENCE OF WOUNDS OF ARTERIES.

Naturally, as a physician my experience with wounds of arteries has been very limited—until recently only 10 cases, in 5 of which arterio-venous aneurysm followed. The other 5 cases came in medico-legal post-mortem work in Montreal, and they may be just mentioned for their interest.

1. A soldier during the vaccination riots in Montreal gave a man a prod with his bayonet, which passed through the top of the left lung and cut the subclavian artery just as it leaves the arch to curve over the pleura.

2. A man in a brawl received a stab with a penknife at the root of the neck, followed by a traumatic aneurysm, which was operated upon unsuccessfully; the tip of the knife had cut the vertebral artery between the lateral processes of the fifth and sixth cervical vertebræ.

3. A man received a blow on the head in a tussle, and some days later died suddenly of hæmorrhage from the nose; a fracture of the sphenoid was found with laceration, or erosion, of the internal carotid just where it turns into the sella turcica.

4. A man in riding jerked against the pommel of his saddle and drove a dirk which he was carrying into his femoral artery.

5. A fatal bullet wound of the left internal iliac artery.

The arterio-venous cases I will quote in connexion with their most striking features. Within a few months I have seen as many instances as in 40 years of hospital work: two cases at the American Hospital, Paignton, in one of which Dr. Beal did a successful Antyllus operation; a patient of Mr. R. B. Wright at Chester, to whom I shall refer in connexion with the physical signs; and the two patients we have the opportunity to study to-day—for one we are indebted to the kindness of Captain Mowat, of Sheffield, the other is under the care of Major Ernest Mallam at the base hospital.

Exhibition of Two Cases.

W. W., aged 28, a private, had served in the Northumberland Fusiliers for eight and a half years, was always well and strong and never had a serious illness. On Oct. 19th at about 11 A.M. at La Bassée he received three shrapnel wounds, one in the left thigh. Was in the trenches until 7 P.M. Lost an enormous amount of blood. The fragment entered the left thigh just 3 inches below Poupart's ligament, and the piece is still in the leg. There was a great deal of swelling and a good deal of disability at first. The leg did not change in colour, but he was very weak from loss of blood. The wound did not suppurate. Captain Mowat noticed the swelling in the left leg and felt the murmur. He was at Sheffield from Oct. 23rd to Dec. 10th, and gradually got well. Captain Mowat took a remarkable phonograph record of the murmur, which I heard a few weeks ago at Sheffield.

Now the man is healthy-looking, of good colour; he limps on the left leg; there is no swelling or discolouration. The left thigh looks a little smaller than the right, particularly in the antero-lateral region. There is a healed wound just 3 inches below Poupart's ligament in the lower end of Scarpa's space, where there is a diffuse swelling not very marked, and then a little groove-like wasting in the line of the femoral artery. The greatest prominence is at the site of the entrance of the bullet. The pulsation is diffuse, but does not extend above Poupart's ligament. The veins are not greatly distended, but the internal saphenous is visible, and those on the left side are larger than on the right.

On palpation the characteristic thrill is felt of maximum intensity over the injury, and it is felt down the course of the femoral. There is a slight firm induration just beneath the scar, but not a definite tumour. Pressure on the femoral stops the pulsation at once. The thrill is felt above Poupart's ligament. There is no pistol-shot sound to be felt. Pulsation in the popliteal and tibials not palpable. On auscultation a machinery murmur of extraordinary intensity is heard of maximum intensity at the site of the injury, propagated down the femoral, heard in the popliteal. The arteries are not sclerotic and the heart sounds are clear.

Major Mallam's case is an exact counterpart.

Bullet wound of the thigh on Dec. 30th, passing through Scarpa's space. Much blood was lost, but the orifices of entrance and exit healed rapidly. A large effusion of blood in the upper region of the thigh at first masked the nature of the lesion, and it was not until the swelling subsided that the characteristic signs of arterio-venous aneurysm were noted. There are now moderate swelling in Scarpa's space, pulsation palpable, thrill felt with greatest intensity at the point of maximum impulse, and a loud machinery murmur.

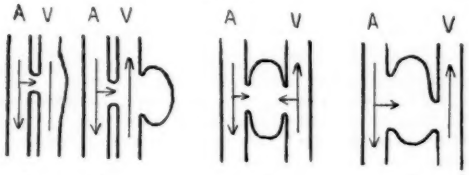
ANATOMICAL VARIETIES AND RESULTING CHANGES.

We need not take time to discuss the anatomical varieties which are all modifications of two types, the simple tangential opening between an artery and a vein—aneurysmal varix, and the formation

[10] Opera, Ludg., 1676, p. 51.

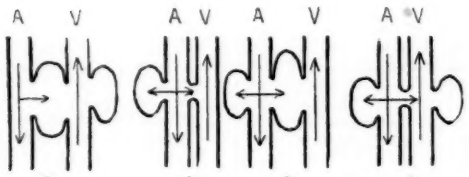
of a sac communicating with both vessels—varicose aneurysm. The accompanying diagrams (Figs. 1 and 2) from Lexer's "Handbuch der allgemeinen Chirurgie" show all possible forms.

FIG. 1.



1. Arterio-venous fistula without (1A) and the same with (1B), a venous sac—varix aneurysmaticus. 2. Arterio-venous aneurysm with false intermediary sac—aneurysma varicosum. 3. Arterio-venous aneurysm with arterial sac. Secondary arterio-venous aneurysm.

FIG. 2.



1. Arterio-venous aneurysm with false intermediary sac and varix on outer side of vein, due to double injury of the latter. 2. Arterio-venous aneurysm with immediate communication (A), or with false intermediary sac (B), and with a false arterial aneurysm, due to a single venous and double arterial injury. 3. Arterio-venous fistula with opposing sacs, due to a double injury of both vessels.

The changes that follow are: (1) The blood current is reversed, to a certain extent, in the veins; (2) the blood pressure is increased in them; (3) their walls become arterialised; and (4) the blood pressure in the artery is heightened on the proximal and lowered on the distal side of the lesion. In smaller vessels very slight changes occur. I show you a drawing of an aneurysmal varix of the anterior tibial vessels from a case in the Strassburg clinic, in which a year after the accident the vein was little if at all dilated. In lesions of the vessels of the neck and arms the venous stasis is much less than in the legs, in which the effect of gravitation is so felt that year by year the changes become more pronounced, until, as in the photographs I show, large varicosities and sacculi are formed. Femoral and popliteal arterio-venous aneurysms may last for years without great involvement of the veins, but in a majority of the cases venous stasis forms the most serious sequel of the disorder.

The changes in the arteries on the proximal side of the lesion are less striking, but sooner or later sclerosis occurs with dilatation, and sometimes with saccular aneurysm opposite the orifice of communication. Even within two months of the injury the femoral artery may be felt to be larger and with stronger pulsation (Paignton case). Remote effects on the general circulation are rare, particularly in aneurysms of the vessels of the head and arms. One of my patients (Case 3) died from heart disease which may have had some connexion with his long-standing lesion. In the leg progressive dilatation of the vessels may lead to serious effects. In the case of Captain Mosher,[11] wounded in the middle of Scarpa's space 1898, at the time of death (1911) the dilated arteries extended from the bifurcation of the common iliac to the lower third of the thigh. Hypertrophy of the heart followed, and death from progressive failure of the circulation.

[11] Reported in Lagarde's Gunshot Injuries, 1914, p. 281.

PHYSICAL SIGNS.

In no form of aneurysm are the physical signs so distinctive. *Inspection* may not show much, as in the cases you have just seen: diffuse pulsation at the site of the communication, moderate swelling, but not necessarily any early venous engorgement.

In the carotids, subclavians, and axillaries the condition may persist for years without much swelling or great enlargement of the veins. On the other hand, in the form that was so common at the bend of the elbow in venesection days the circulation is much interfered with. Even in smaller vessels such as the occipital the venous swelling may be enormous, as in a patient operated upon by Dr. Cushing at the Johns Hopkins Hospital in 1905. This case illustrates, too, the progressive nature of the lesion, as year by year the vessels on the side of the head grew larger, and after seven years they formed a large pulsating mass which had to be resected, after ligation of the external carotid artery.[12] In the leg, particularly in the situation in the cases you have here seen, venous engorgement sooner or later dominates the scene, and after some years the appearance may be very remarkable, as in the following case.

CASE 1. *Illustrating the development of enormous venous sacculi.*—The patient, aged 31, was shown at the Johns Hopkins Hospital Medical Society on Jan. 16th, 1905. In his eleventh year he had a knife wound just above the right knee; not long after pulsation was noticed along the femoral artery, with marked swelling. He has had good health, with very little disability, except from the increasing varicose veins, which sometimes burst and caused troublesome bleeding. The leg presented a very remarkable appearance, as shown in Figs. 3 and 4. The superficial veins were everywhere varicose; those of the antero-lateral aspect of the thigh were of enormous size, extending into the flank, and many of them were filled with thrombi. The course of the femoral, particularly in Scarpa's space, was occupied by a prominent pulsating tumour, the outline of which can be just seen in Fig. 4. Over this there were an intense thrill and a loud humming murmur with systolic accentuation; pulsation was everywhere forcible. Above Poupart's ligament, lifting the entire iliac fossa and extending into the hypogastrium, was a second tumour, in which the pulsation was very strong, a marked thrill, and the same loud murmur. The size of the tumour, which extended fully 8 inches transversely, can be well seen in Fig. 4. It increased in the sitting posture. The patient said this had been present for many years, but had, he thought, increased in size. It felt very solid and firm and the pulsation was extensile and strong. His only serious disability was from the varicose veins.

The tumours both above and below Poupart's ligament were huge venous sacs. When I demonstrated this case a doubt was expressed whether these really could be venous sacs, but there are many specimens, as in the one I refer to of Dr. Beaumont, and cases are recorded showing a similar condition. A recent one was reported by Eisenberg[13] of a man, aged 65, wounded 18 years before in the thigh, and in addition to great dilatation of the femoral vessels there was a sac 3 inches in diameter of the iliac vein above Poupart's ligament. Additional features that may be noticed on inspection are the increased size of the limb; an actual increase in growth has been noted by Broca in the young; the skin may be

[12] Journal of the American Medical Association, Dec. 23rd, 1905.
[13] Ibid., Dec. 13th, 1913.

much rougher, covered with a thicker growth of hair, and in long-standing cases varicose ulcers are common.

On *palpation* the characteristic thrill is felt, vibratory, rough, continuous, and increasing in intensity with the diastole of the artery. Except in its roughness it is quite unlike any other thrill felt in cardio-vascular lesions, and is pathognomonic. It has an interest, too, as one of the oldest of recognised physical signs, having been described by Antyllus. While of greatest intensity at the site of the lesion, it may be widely diffuse and even felt at the finger tips in an axillary or brachial aneurysm, and at the toes in a femoral. In the patient seen with Mr. Wright[14] at Chester a few weeks ago, there was an additional physical sign which I have never before noted, nor in looking pretty carefully through the literature do I see it mentioned—a pistol-shot sound of great intensity, exactly such as one feels and hears in aortic insufficiency. It was an arterio-venous aneurysm of the popliteal vessels caused by a bullet wound on Jan. 29th. The note which I dictated was:—

On palpation an intense vibratory thrill, continuous, with diastolic intensification, is felt over the area of pulsation, not below the middle of the leg. The striking feature is the pistol-shot shock felt during the diastole of the vessel, exactly resembling that which one hears and feels in the femoral in aortic insufficiency. It is felt only over the area of pulsation, not in the femorals, and there is no valvular disease. In addition, one feels the strong, firm, aneurysmal pulsation.

In the second case at the American Hospital, Paignton, there was no pistol-shot sound over the popliteal tumour, but one of great intensity could be heard, without the slightest pressure, over the femoral artery. On the other side it could be brought out only with pressure of the stethoscope.

FIG. 3.

CASE 1.—Arterio-venous aneurysm of the femoral vessels of 20 years' standing.

In the early stages the tumour may not be large, or where it is simply an aneurysmal varix little or no swelling may be present. If there has been effusion of blood the tumour, as in Major Mallam's case, may diminish considerably in size. Subsequently the diffuse swelling may be largely venous, but a circumscribed tumour may be either sacculi in connexion with the vein or artery, or sacculi at some distance from the original site of the injury, and there is not infrequently aneurysmal dilatation of the artery above the lesion.

On *auscultation* the second characteristic physical sign is heard—a loud, rough, humming-top murmur, continuous, with marked intensification during the cardiac systole. During distension of the vessel the murmur is rough, harsh, and vibratory; during its contraction it has a graver, deeper quality. It may be widely diffused, heard up and down the vessels even to the finger-tips in the brachial and axillary aneurysms, and to the toes in the femoral. It may even be intense enough to be heard at some distance from the site of the aneurysm.

FIG. 4.

Same patient as Fig. 3, showing the varicose veins and two huge venous sacculi, one above, the other below, Poupart's ligament.

Practically these are the three great physical signs of arterio-venous aneurysm: the dilatation of the veins, the thrill, and the murmur. Other minor features may be mentioned—absence or lessened pulsation below the site of the tumour, the remarkable influence of posture on the venous engorgement, the pulsation in the peripheral distended veins, the frequency with which phleboliths and thrombi may be felt.

COLLATERAL CIRCULATION.

From the surgical standpoint it is important to determine the adequacy of the blood-supply beyond the lesion. Recumbent the legs, for example, may look alike, but within a few minutes after assuming the erect posture the one on the side of the lesion may become dusky in colour, and the veins dilate. It is not easy to determine the blood pressure in the arteries below the lesion. Korolkow uses a modified Gärtner's tonometer, and Matas lays down the rule:—

If the peripheral blood pressure is shown by the manometer (a modified Gärtner's tonometer) to be normal or well sustained after compression of the main trunk above the aneurysm then the obliterative operation may be safely applied. If, on the other hand, the blood pressure falls to zero it is evident that the collateral circulation is inadequate, and that no chance should be taken with the obliterative operation or with any procedure whatever (ligature, extirpation, &c.) which would permanently occlude the parent artery.[15]

Another test is after application of an Esmarch bandage apply pressure on the artery above the aneurysm, and note the state of the circulation and the time taken for the skin vessels to fill. In one of the Paignton cases (popliteal) in the sound leg it took three minutes to obliterate the anæmia

[14] On March 26th Mr. Wright operated, tying the artery above and below and closing the direct orifice into the vein. There was no sac. The vein was unusually large.

[15] Keen's Surgery, vol. v., p. 273.

caused by the bandage while the femoral was compressed above Hunter's canal, but in the affected leg the skin vessels of leg and foot were filled within a minute! The femoral artery on this side felt larger and had a much more powerful pulsation.

RESULTS.

Left alone, what becomes of these cases? Much depends upon the position of the aneurysm. Those in the upper extremities are more favourably situated than in the lower. The following may happen:—

Non-Intervention followed by Good Results.

1. The aneurysm may remain unchanged for years and interfere little, if at all, with the patient's health and vigour. Particularly is this the case with the cervical and axillary vessels. Case 3 of my series illustrates this in a remarkable way, as for years he rowed in races and lived a very athletic life. Case 2 also illustrates the wisdom of non-intervention.

CASE 2.—On April 9th, 1900, Dr. Alderson sent me from Russelville, Kentucky, a man, aged 29. On the night of Jan. 5th he had received four bullets, one in the left shoulder, one in the back of the left arm, one in the left lower axillary region, and the fourth, the important one, entered the middle of the fold of the left trapezius muscle, passed inwards and downwards in front of the spine, and came out under the right clavicle. All the wounds healed rapidly, but at first he had some difficulty in swallowing. The right supraclavicular fossa was occupied by a pulsating swelling extending for about 7 cm. upwards and outwards. There were a marked thrill and a loud humming-top murmur with systolic intensification, which was heard up the neck and down the vessels of the arm. The bullet could be felt just below the clavicle. The tumour had increased, and the question was whether it was safe to leave him alone. This was the policy I urged strongly. Twice he narrowly escaped operation. Two years afterwards I heard from him and he remained well; the tumour was somewhat smaller, but the bruit was still a little troublesome. Five years after the accident I heard again. He had remained well, the tumour had not increased in size, and he was able to use his arm and do everything.

Spontaneous Healing.

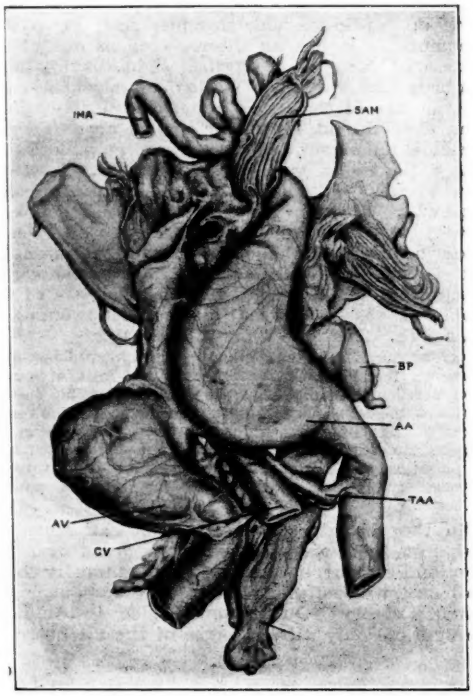
2. Spontaneous healing may occur, the orifice closing between the artery and the vein. This must have happened in Case 3, as a careful dissection by Professor J. J. Mackenzie, of Toronto, failed to demonstrate any communication between the greatly dilated vessels. As such a mode is rare, I give an abstract and a sketch of the dissection. (Fig. 5.)

CASE 3.—I reported the case originally in the *Annals of Surgery*, 1893. In 1878 the man, in running down a sloping grass plot, fell and forced a lead pencil into the arm-pit; a gush of blood followed and the arm became black and blue to the wrist. The aneurysm involved the axillary vessels. He subsequently lived a very athletic life, rowed in the Argonaut Boat Club, and served in the South African War, where he came under Sir G. H. Makins's care. He was invalided in consequence of a sudden pain on the left of the head and neck, and the patient was positive that the tumour had enlarged. He wrote to me on Oct. 17th, 1904, saying that he had marched 610 miles in 32 days and fought 16 battles, with the result of increasing his aneurysm very materially, particularly at the base of the neck. He died in May, 1909, 31 years after the accident, of gradual heart failure.

There are many cases in which the condition has lasted quite as long as this with equally good health; but the special point of moment in this case is that in the careful dissection of the vessels made by Professor Mackenzie no communication could be found between the greatly dilated axillary vessels. The final report in this case was given in THE LANCET of Nov. 1st, 1913. Closure of the orifice is exceedingly rare. Another case is reported by Pluyette[16]:—

A man, aged 33, applied in October, 1904, with a traumatic arterio-venous aneurysm of the right subclavian

FIG. 5.



CASE 3.—Arterio-venous aneurysm of the axillary vessels thirty-one years after the injury. S.A.M., Scalenus anticus muscle. B.P., Brachial plexus. A.A., Axillary artery. T.A.A., Thoracico-acromial artery. C.V., Cephalic vein. A.V., Axillary vein. I.M.A., Internal mammary artery.

produced by a revolver bullet. The physical signs were of the usual character. On Nov. 15th he returned to the hospital, having had severe pains in the right hand and arm during the night. The parts were cyanosed, the pulse was scarcely palpable, but what was most remarkable was the disappearance of the thrill and murmur over the site of the aneurysm. There was pain in the course of the arteries, particularly the axillary and the brachial. The radial appeared to be large and hard, and there was no pulsation. It seems to have been an instance of cure by the formation of a thrombus in the arteries.

Occurrence of Sudden Death.

3. Sudden death may occur, either from heart failure or from embolism. Nothing was found to account for the sudden death in Case 4 of my series.

CASE 4.—A man, aged 29, admitted in November, 1904, had received 15 years previously a pistol shot in the lower third of the thigh; following this a tumour appeared, which had been present ever since. There was much disability owing to enlargement of the leg, with great distension of the veins, much lividity, and a persistent ulcer above the ankle. He died suddenly, apparently of syncope. Clinically there was a large pulsating tumour at the lower end of Scarpa's triangle, not easily compressible, with a continuous machinery murmur and a thrill transmitted up and down the leg. Anatomically the condition found by Dr. Rufus Cole and Dr. W. G. MacCallum was very remarkable. The femoral artery was dilated, and at the beginning of the lower third of the thigh presented two perforations separated by a narrow bridge of tissue; the femoral vein just opposite showed a

[16] Bulletin et Mémoires de la Société de Chirurgie de Paris, 1905.

perforation at the same level. A probe could be passed from the artery into the vein through these apertures. On the inner side and in front of the artery and vein, and communicating with both, was a sac 12 cm. in diameter formed of dense fibrous tissue and lined by a granular, deeply pigmented clot. "This sac does not form the communication between the vessels, although the probe passes readily through either into it, nor are they (i.e., the sac and the vessels) directly united, but rather by way of a small space or vestibule which lies in front of the orifice of the sac." The veins were enormously distended both above and below the level of the communication.

Evidently this large venous sac, which communicated freely with the artery, formed the pulsating tumour to be felt in the front of the thigh.

4. *Rupture* may occur with fatal hæmorrhage, of which a number of cases are recorded.

Disability from Varicose Veins and Thrombosis.

5. In the crural vessels progressive disability may result from the varicose veins, thrombosis, and ulceration. When left too late the condition of the vessels is unfavourable to operation and specially favourable to thrombosis—the surgeon's chief danger. These accidents are well illustrated in the following case.

CASE 5.—A man, aged 34, whom I saw with Dr. Halsted and Dr. Bloodgood, was admitted in May, 1897. Eight years before he was shot in the popliteal space. He did not notice the tumour for a year. It was a large spindle-shaped mass filling the popliteal space, with a well-marked continuous thrill felt over the tumour and far down the leg. The femoral artery was ligatured in Hunter's canal. The leg became gangrenous and had to be amputated. On dissection, just where the femoral becomes the popliteal there was a communication between the vein and the artery, an opening 1 cm. in diameter. Opposite to this on the wall of the artery was a sac measuring 2 by 3 cm. Above the opening the veins were greatly distended and dilated, with thickened walls. At the time of the operation it was noted that some of them were thrombosed and there was a small clot in the artery, and the communication between the artery and the vein was also closed by a small thrombus.

Widespread thrombosis probably accounts for the sudden onset of swelling and disability of a limb many years after the accident. Evidently this happened in the remarkable case reported by Rokitansky.[17]

A man, aged 62, admitted Nov. 28th, 1842, was in 1809 shot in the shoulder. The bullet was removed, but some grains of shot remained. He recovered, but had always a cramp-like feeling in the tips of the fingers of the left hand. For two years there was an increase in the size of the whole arm, which had increased rapidly in the six weeks, and on admission was œdematous and cold, with the skin of a dark red colour. In the arm-pit was an old pulsating tumour the size of a hen's egg, with marked thrill. The subclavian was tied on Sept. 23rd. He died 15 days afterwards of secondary hæmorrhage. There was an arterio-venous aneurysm of the axillary vessels, which were greatly enlarged and sclerotic, and there was a clot in the veins.

And lastly, the vascular tissue involved in the aneurysmal area may take on a nævoid growth. Apart altogether from arterio-venous aneurysm, the entire vessels of a limb, arteries and veins, may take on active growth, as in the extraordinary specimen of macroangiosis of the arm in the Charing Cross Hospital Museum, in which the growth of the vessels followed an injury. This has happened in certain cases of arterio-venous aneurysm of the vessels of the head, and though the orifice of communication may be small, within a few years the vessels (as in Cushing's case already referred to) may become enormously enlarged, much more than can be accounted for by any increase in pressure.

[17] Observation 46 of his great monograph Ueber einige der wichtigsten Krankheiten der Arterien.

TREATMENT.

It is not my place to speak of treatment, but we all agree, I think, with the conclusion arrived at by Subbotich, senior surgeon of the Belgrade State Hospital, from his experience in the Balkan War, "that arterio-venous aneurysms should be operated upon, as they offer small prospect of spontaneous cure, although they often remain stationary for a long time and cause relatively little trouble." It is a good deal a question of situation and technique. As the cases here reported indicate, with the lesion of the axillary and subclavian vessels good health may be maintained for years without any serious trouble, but there are always risks, particularly of thrombus formation in the distended veins, and even after lasting 30 or 40 years serious trouble may arise. Urgency is greater in the case of the lower limbs, and I should say that it would be very much safer in the two cases we have just seen to operate before the venous engorgement becomes excessive.

A new and truly marvellous technique has been developed in vascular surgery, very largely owing to the work of Alexis Carrel, and the increasingly favourable results in this all-important department of surgery have followed directly upon animal experimentation. It is not too strong a statement to make that up-to-date vascular surgery cannot be done in a hospital whose younger surgeons have not full opportunities to experiment upon animals. The extraordinarily delicate technique of vascular suturing is an art acquired only with much practice. It is a chapter in the history of surgery of which our colleagues may be proud. I was greatly impressed with the statistics given by Matas at the last International Congress of Medicine dealing with operations on aneurysm generally.

Of the 225 cases collected 194 affected the lower limb, 23 the upper limb, 4 involved the carotid artery, 4 the abdominal aorta. Of the whole number, 53·3 per cent. were aneurysms of the popliteal. As to the operation involved, in 150 cases the obliterative operation was done, in 50 the restorative, and in 25 the reconstructive. Of the 225 cases 206 were successful, in 4 cases gangrene followed, and all four operations on aneurysms of the abdominal aorta were followed by death.[18]

Within the next year there will be greater opportunities for vascular surgery than have ever before been offered. The results of the last wars should be carefully studied by our surgeons, those given by Stevenson for the South African, by Saigo for the Japanese, and by Subbotich for the Balkan. The statistics will be found in great detail in the monograph by Monod and Van Vert.[19] They are also given by Sir G. H. Makins in the Bradshaw lecture on Gunshot Injuries of the Arteries,[20] 1913; in Bernheim's (of the Johns Hopkins Hospital) recently issued monograph on "Surgery of the Vascular System";[21] and may I refer the younger army surgeons to the section on aneurysm in "Keen's Surgery" by that modern Antyllus, my old and valued friend Rudolph Matas, of New Orleans.

In conclusion, may I put in a plea for the museums? Specimens should be sent to the Army Medical Museum, Millbank, and to the great Hunterian Collection at Lincoln's Inn Fields; and may I ask that very careful reports of the cases be sent to the Central Committee for preparation of the medical and surgical history of the war, 34, Guilford-street, Russell-square, London, W.C.

[18] THE LANCET, August 23rd, 1913, p. 550.
[19] Revue de Chirurgie, vols. xli. and xlii., 1910.
[20] THE LANCET, Dec. 20th, 1913, p. 1743.
[21] Lippincott Company, 1914.

THE ETIOLOGY OF RICKETS:

A STATISTICAL STUDY OF THE HOME CONDITIONS OF 400 TO 500 RACHITIC CHILDREN.

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ALTHOUGH it is now over 300 years since Glisson first described "The Rickets," the reason why the bones are deficient in calcium still remains obscure; but so carefully had this pioneer observed the symptoms of the disease that little, if anything, of clinical interest has been added to his classical description. Bland-Sutton[1] and his followers, who include the majority of English and American writers, believe that the cause lies in some error of diet, most probably a deficiency of fat. Marfan[2] has been preaching for many years that it is due to auto-intoxication from the intestinal canal, while von Hansemann[3] puts it down to what he classes broadly as domestication. There are others again —e.g., Moussu[4] and Koch[5]—who have considered rachitis to be of the nature of an infection; and finally, Basch,[6] Matti,[7] Klose and Vogt,[8] and Stoeltzner[9] are of the opinion that the disease arises from an absence of one of the internal secretions.

It is admittedly very difficult to draw conclusions from clinical observations, and especially is this so with regard to the matter of diet in the class of child that suffers from rickets, and accordingly much experimental work has been done towards the elucidation of the problem. In order, however, that one may give due weight to the very various conditions under which different workers have sought to engender the disease, it is necessary fully to appreciate the criteria by which a diagnosis of rachitis can be confidently made. For this end a careful histological examination of the bones is essential. In a growing bone the trabeculæ are composed of calcified tissue studded throughout with bone cells and surrounded by a narrow rind of structureless tissue. The extent of this zone of structureless, or so-called osteoid, tissue varies with the rate of growth, being more abundant the more rapid the growth, but in rachitis it becomes excessive and may be even more abundant than the true bone itself. It is the presence of this osteoid tissue, which may in places almost entirely replace the bony trabeculæ, that is alone pathognomonic of the disease.

Careful microscopic examination has demonstrated two facts—viz., that all examples of spontaneous and experimental rickets in animals described by veterinarians and experimentalists are not identical with the disease as met with in man; and that merely naked-eye or chemical examination of the skeleton (as pointed out by Schmorl[10] and Stoeltzner[11]) has been the cause of a great deal of misconception in the subject. Depending on naked-eye examination, as is well known, was the reason for confusing for so many years congenital syphilitic and rachitic osseous changes.

One cannot lay too much stress on the importance of the histological picture of the bone lesions, nor on the help which a true appreciation of these changes has given us in the valuation of the experimental work of the past and must give us in the experimental work of the future. This same factor, however, has unfortunately tended to confine interest to the bone changes, with the result that the question of general metabolism has been overlooked. From chemical examination of the bones and tissues it would appear that in rickets there is a serious error of the calcium metabolism consisting in the inability of the body to utilise this salt, which as a rule is present in the diet in sufficient amount. Though the poverty of the calcium is found chiefly in the bones, it exists to a certain extent in the other tissues as well.

It is by the investigation of the calcium metabolism alone that a diagnosis is possible in the earliest stages of the disease—i.e., before any bone or other gross changes have presented themselves; and it is the only method during life by which one can declare with certainty that the disease is active. During this period of the disease more calcium is excreted in the urine and fæces together than is ingested with the food, and by watching the behaviour of this calcium interchange the influence of certain factors, curative and otherwise, can be studied. Unfortunately, with the facts at present at our disposal, it is impossible to say whether the calcium, being mainly excreted in the fæces, passes for the most part through the intestine without being absorbed, and is thus conveyed to the tissues in insufficient amount, or whether, as in osteomalacia, a disease considered identical with rickets by many authorities—at least so far as its histology is concerned (Schmorl)—the bones and tissues are unable to fix the calcium which is brought to them in abundance by the circulating blood.

Dibbelt[13] inclines to the former view, but the histological examination of the lesions induced by feeding animals on a diet poor in calcium does not substantiate his contention. Soft bones can most certainly be obtained in this way, but there is a complete absence of the characteristic osteoid tissue. The trabeculæ are thinner and more widely separated than normally, but nature has made the most of the material at her disposal, and all the trabeculæ are perfect in their formation.

The latter theory is therefore more likely, and it is not improbable that the power of the bones and tissues to retain the calcium is dependent on a hormone, the product of some ductless gland. This view of the subject has been suggested by Stoeltzner,[9] who reported rapid improvement in his cases by treatment with suprarenal extract. Subsequent workers, however, have not confirmed his results. More recently Basch, Matti, Klose and Vogt have indicted the thymus gland, and a few months ago Garrod[14] made a strong plea for the hypothesis that some affection of this organ is responsible for rickets. A considerable amount of experimental work has been done on this aspect of the subject, but the results are so contradictory that judgment must be reserved for the present. There seems no doubt that the bone changes after thymusectomy described by Matti are of a rachitic nature, but that they are dependent on the removal of this structure is not so certain. After the operation the animal becomes very lethargic, and the osseous changes do not appear for some considerable time after. Hart and Nordmann[12] state that so long as the animals are allowed a sufficiency of exercise no bad effects from thymusectomy are noticed, and Pawlow[15] some years ago drew attention to the tendency to softening of bones in dogs subjected to operations for biliary, pancreatic, and intestinal fistulæ. Moreover, in rickets and thymusectomy the calcium metabolism shows definite differences. In rickets the calcium is chiefly excreted by the fæces, there being a diminished

output by the urine, whereas in thymusectomy, just as in starvation and diabetes, the chief route of excretion is the urine. In this connexion it should also be remembered that in osteomalacia there has frequently been reported an increased calcium output by the urine (von Noorden[16]).

The study of the calcium metabolism also makes it very unlikely that a deficiency of fat in the diet is the cause of the trouble. Freund[17] has shown that while cod-liver oil increases the percentage retention of the calcium of the food, milk fat, on the other hand, causes an increased excretion of the salt, which is just the state of matters obtaining in active rickets. And, further, it is interesting to note that Rosenstern[18] records the case of a child that developed rickets while on a diet rich in fat.

That rickets is of the nature of an infection is a most seductive theory and one against which it is most difficult to argue. Its geographical distribution, its seasonal incidence, and the factors of hygiene which favour its appearance recall very forcibly the behaviour of endemic cretinism, and also that of typhus fever, both of which diseases are probably infectious. There is, however, a dearth of experimental proof in favour of such a conception, and in any case, whether the etiological factor is of the nature of a microbe or not, the infectiousness of the disease is certainly not great, since rachitic and non-rachitic children can be housed together without the latter running any risk of contracting the disease.

Some years ago I carried out an experimental research into the etiology of rickets, and came to the conclusion that the disease could be induced in animals by confinement. These results were embodied in a paper published in the *British Medical Journal* in July, 1908. I may perhaps here mention that Schmorl had an opportunity of examining my specimens, and he expressed the opinion that the bone changes were identical with those found in human rickets. From my experiments there was no evidence whatever that deficiency of fat, or any other dietary error, was a factor in the etiology. All the animals to which a fat-poor diet had been given developed marasmus, and after death none presented signs of rachitis, whereas those allowed a liberal diet of milk and porridge, but deprived of exercise, became markedly rachitic. This is, of course, directly opposed to the earlier teaching of Bland-Sutton, whose experimental results have never been questioned in this country, and have more or less dominated the pathology of the disease ever since.

Bland-Sutton's experiments were carried out in the Zoological Gardens, London, where previous to his researches it had been found practically impossible to rear young animals without them developing rickets. He found that the young were usually fed on lean horseflesh and bones, but as their teeth were not sufficiently strong to crush the bones, and thus extract the marrow, he concluded that the diet must necessarily be very poor in fat. To counteract this defect he administered cod-liver oil, and by this change in the diet alone he reports that he was successful in rearing young animals free from rickets. It is interesting to find, however, that rickets is still a common disease in zoological gardens (in those of London and Glasgow to my own knowledge), and that the superintendents of these institutions do not find it possible by the administration of cod-liver oil to hinder its ravages.

So far as I am aware there is only one zoological garden, at least in Europe, where rickets does not prevail, and that is the most excellent one of Carl Hagenbeck, situated on the outskirts of Hamburg. There the conditions are made to simulate the natural home of the animals, which are not kept cooped up in cages but allowed to roam about freely in parks enclosed by high railings. Trees, earth, and rocks from the natural haunts of the animals are utilised to make the place of exile as like the home conditions as possible. It is not likely that this latter factor has anything to do with the prevention of the disease, and to my mind it is due to the avoidance of "domestication," which, in von Hansemann's opinion, is the chief etiological factor. According to this author, who has written one of the most interesting papers on the subject within recent times, it is the herding of animals under unnatural conditions which induces the disease, and the more remote these are from nature the more powerful is their effect. Von Hansemann has come to this conclusion not only from a consideration of the disease as it occurs spontaneously in the human and animal worlds, but also from that experimentally induced. He remarks in his paper that rickets is unknown in Japan, and in consequence he thought that country a suitable place for conducting experiments.* Through the good offices of one of his Japanese students he got a young wild monkey captured and confined in a cage, and when curvature of the limbs appeared had it sent to him in Germany, where he made a careful histological examination of the bones. The bone changes he describes as identical with those met with in human rickets, and he concluded that they had been brought about by the confinement.

Since the publication of my paper I have heard of several instances in the animal world where confinement or deficient exercise was responsible for the development of rickets, or at least a disease clinically closely simulating it. Dr. John Fergus, of Glasgow, at a discussion on this subject before the Glasgow Medico-Chirurgical Society, related how during the summer his son and niece each had a fox terrier pup of the same breed and of about the same age. His son was able to run about with his pet and thus it obtained plenty of exercise, but his niece, who was unable to do this, had her favourite tethered to a garden seat in order that she might always have it by her. Both were fed exactly alike so far as could be ascertained, and the only difference in the treatment of the two animals seemed to be in the amount of exercise allowed. By the end of the summer the boy's dog was a fine healthy animal, whereas that of the little girl had become so deformed from what Dr. Fergus described as rachitic curvature of the bones that it had to be destroyed.

The following is an extract from a letter which I received from a farmer on the West Coast of Ireland.

I have learned of a case of rickets in a pup about which I am sure you would like to hear. This pup was fed on a perfect food—new milk, but from the very start was kept confined in the bottom of a barrel, where it was quite

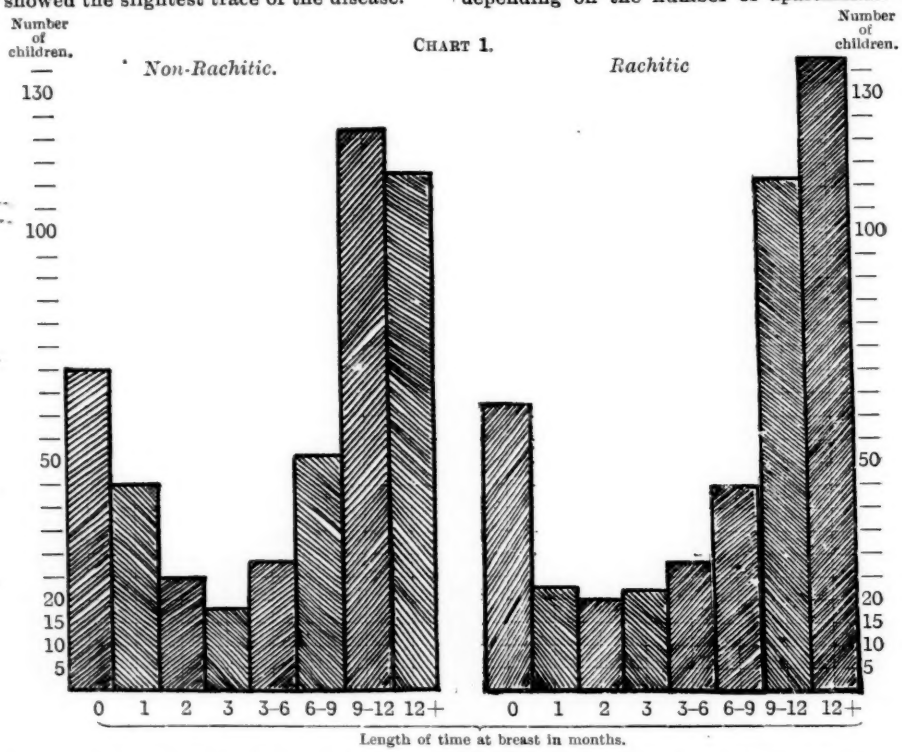
* Since the publication of Hansemann's paper several reports have appeared on the question of rickets in Japan. In the year 1906, while examining recruits, rickets and osteomalacia were accidentally discovered by Ogata in the Province of Toyama, which is situated on the western shore of the north island. It would seem that the disease is endemic in this region and, according to folk-lore, to have existed for at least 50 to 100 years. The land is low-lying, very moist, and badly irrigated, and the houses are not so well lit or ventilated as in the rest of Japan. To these factors Ogata is inclined to ascribe the disease, and as a prophylactic measure he suggests that these defects should be removed as far as possible.

impossible it could exercise itself. One swallow does not, of course, make a summer, and one case of the kind does not prove that rickets is caused by want of exercise, but in the light of your investigations, and the great rarity of this disease in the West of Ireland (I having never seen a case of rickets in the West of Ireland in man or beast), has weight.

Through the son of another farmer in Ireland I learned that his father had noticed that during the winter rickets occasionally developed in sheep which were housed in sheds, whereas those left on the hills, though not so well fed, never showed the slightest trace of the disease.

previous to the onset of the trouble; (4) the amount of air space in the house allowed to the child; (5) the number of stairs up the house is situated; and finally (6) whether or not the child has been taken much out of doors. It should perhaps be mentioned that in Glasgow, as in most of the smaller towns in the West of Scotland, the houses are built on the tenement system. These tenements are not usually separated from the street by a garden, and are three or four storeys high. Each flat contains three or even six houses, the number depending on the number of apartments. In the

CHART 1.



That exercise has a very definite effect on the retention of calcium is shown by the work of Kochmann and Petzsch.[19] These authors during the course of a research into the factors influencing calcium metabolism encountered one animal in which they found it impossible to bring about an increased excretion of that salt. In the protocol dealing with this experiment it is noted that the animal never was at rest, and the authors concluded that exercise was one factor which strongly influenced the metabolism of calcium. As further exemplifying the effect of exercise in rickets I might perhaps quote from Mayo,[20] who, writing on this malady in 1674, says that "scabies or itching occurring in the course of this disease contributes much to its cure," and to my mind it can only be by forcing the patient to exercise himself that any benefit can accrue.

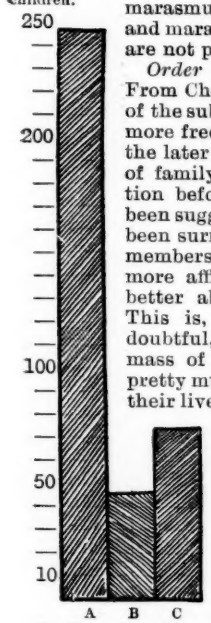
During the past two or three years I have been collecting information regarding various factors in the life of the rachitic child, some of which have been suggested as predisposing to the disease. The points investigated were: (1) The length of time the child was breast-fed; (2) the order of the child in the family; (3) the condition of the bowels

poorer districts of the city houses of several rooms have been subdivided into houses of one apartment, so that many of the common passages are dark and badly ventilated. Other workers, as McGregor,[21] have studied some of these conditions—e.g., the number of stairs up the children reside, but his figures relate for the most part to children in whom the disease was healed, whereas I have taken pains only to utilise facts concerning cases in the active stage of the disease. Whenever possible I have compared the rachitic with non-rachitic children.

Length of time child has been breast-fed.—It has been suggested that denying the child its natural food is an important etiological factor, but my records do not lend support to such an idea. In Chart 1 are graphically represented the number of children breast-fed for varying periods, and in the rachitic as well as the non-rachitic it will be seen that the majority have been suckled for nine months or longer. The similarity of the rachitic and non-rachitic charts is very striking, and disposes not only of the idea that want of breast milk, but also, as has been assumed, that prolonged suckling is at the root of the mischief.

Intestinal troubles (Chart 2).—As mentioned above, Marfan holds that an intestinal auto-intoxication is the source of the trouble, and states that almost invariably there will be obtained a history of some gastro-intestinal disorder for a considerable time before the onset of the disease. My statistics certainly do not support this teaching, since in by far the largest number of the cases the condition of the bowels was described as regular. Although it must be admitted that gastro-enteritis is a not infrequent condition in the class of child which supplies most examples of rickets, marasmus is a more frequent sequel, and marasmic children, as is well known, are not prone to the disease.

CHART 2.

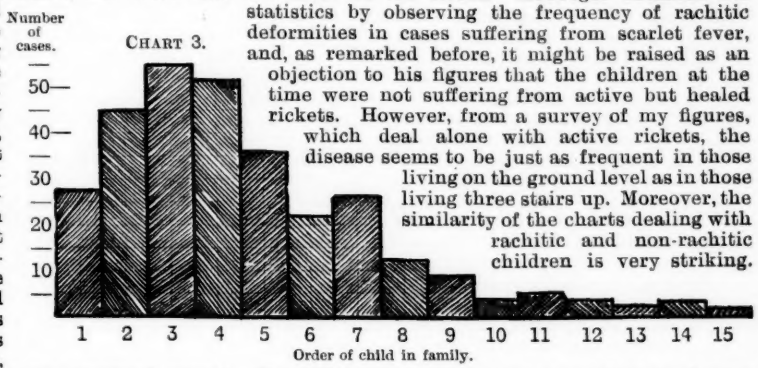


Condition of bowels previous to onset of rickets. A, Regular. B, Constipation. C, Diarrhœa.

Order of the child in the family.—From Chart 3, dealing with this aspect of the subject, it will be seen that rickets more frequently attacks the earlier than the later members of a family. This type of family incidence has attracted attention before, and several reasons have been suggested to account for it. It has been surmised that by the time the later members are born the parents are in more affluent circumstances and thus better able to feed and house them. This is, however, very doubtful, as the great mass of the poor earn pretty much the same all their lives. Again, it has been suggested that the rarity of the disease in the younger members of the family is due to the fact that they are nursed and taken out by their older brothers and sisters, which is, in my opinion, a more likely explanation. It is not improbable, however, that this peculiarity of family distribution is more apparent than real, and is entirely explained by the fact that the majority of families are composed of only four or five children.

Situation of house: number of stairs up (Chart 4).—If want of fresh air plays any part in the etiology of rickets, one would not be surprised to learn that children living in top-flat houses, being probably taken out little, were more prone to the disease than those occupying houses on the ground level. McGregor in his investigations paid particular attention to this point, but he did not find that children living three stairs up were more frequently affected than those in houses on the level of the street. McGregor obtained his statistics by observing the frequency of rachitic deformities in cases suffering from scarlet fever, and, as remarked before, it might be raised as an objection to his figures that the children at the time were not suffering from active but healed rickets. However, from a survey of my figures, which deal alone with active rickets, the disease seems to be just as frequent in those living on the ground level as in those living three stairs up. Moreover, the similarity of the charts dealing with rachitic and non-rachitic children is very striking.

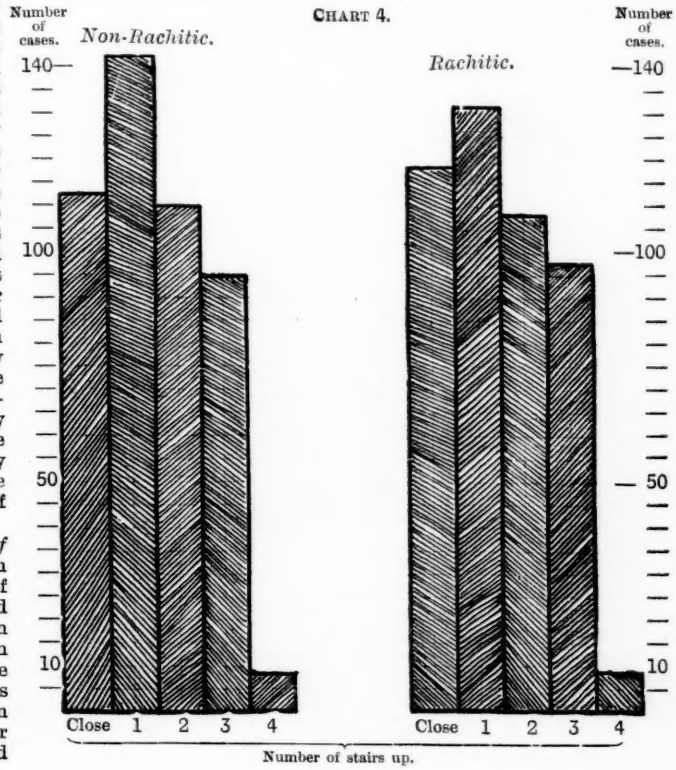
CHART 3.



The infrequency of the cases resident in houses four stairs up is to be accounted for by the fact that there are very few houses of this type in Glasgow.

Amount of air space in house allowed to each child (Chart 5).—As overcrowding and deficient air space are characteristic of the houses of the class which supplies most examples of this disease, and the very opposite of what prevails in those parts of the globe where rickets is unknown, not only in the human but also in the animal world, it seemed not unlikely that investigation of these conditions in a city like Glasgow would show that they are definitely proportionate to the frequency of the disease. In my researches I have taken one individual per room as the unit, and

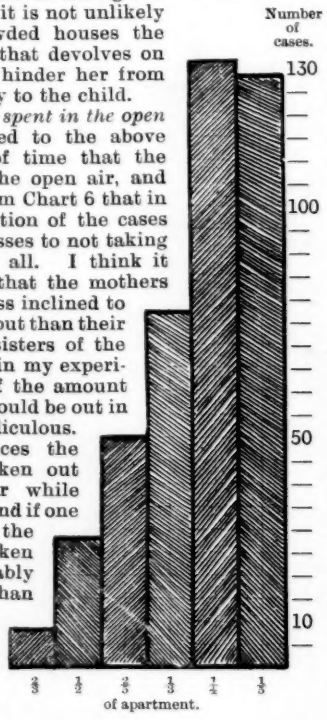
CHART 4.



have expressed the amount of air space per child in fractions of this unit. I have not differentiated between rooms of varying size. Examination of my results shows very definitely that the disease is proportionate to the amount of air space allowed to the child, and that as this diminishes in amount the incidence of the disease rapidly increases. Unfortunately I have no figures relative to a series of non-rachitic children of the same class, and it is just possible that the amount of air space is simply a gauge of the poverty of the family, and in consequence other factors than want of air space are in action. The examination of the blood[22] which I carried out some years ago in this disease tends, however, to support the idea that this factor is at work. The average rachitic child showed a higher percentage of hæmoglobin and a greater number of red blood cells than the average healthy child, exactly the condition which is found in persons subjected to a rarefied atmosphere.

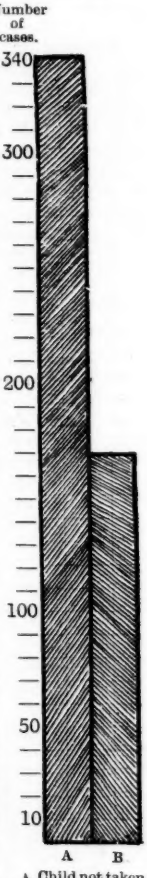
Probably the want of sufficient fresh air acts in a twofold manner. In the first place, the absence of pure air will act as a sedative and tend to make the child less inclined for exercise. I have frequently noticed that if a child is confined to the house it is more easily tired, is less active, and wishes to go to bed earlier, so that the living in overcrowded rooms acts just in an opposite manner to taking the child out. Again, it is not unlikely that in overcrowded houses the amount of work that devolves on the mother will hinder her from attending properly to the child.

CHART 5.



Amount of time spent in the open air.—Closely allied to the above is the amount of time that the child spends in the open air, and it will be seen from Chart 6 that in the larger proportion of the cases the mother confesses to not taking the child out at all. I think it will be conceded that the mothers of the poor are less inclined to take the children out than their more fortunate sisters of the upper class, and in my experience their idea of the amount of time a child should be out in the open air is ridiculous. In many instances the child is only taken out with the mother while doing messages, and if one gets a history of the child not being taken out it is probably true. It is more than likely, too, that many of my cases included among those allowed out were practically speaking not taken out. These two factors—confinement and deficient fresh air—act, as I have said before, by making the child more lethargic and less inclined to exercise itself, although it is quite possible that deficient oxygenation of the blood itself helps towards the production of the special rachitic metabolic error. The results which I have obtained in the treatment of the disease with massage, passive movement, and electricity are strongly confirmatory of the view that deficient exercise engenders the condition. So far as my experience goes no variety of dietetic or medicinal treatment brings about the same rapid and complete cure. The children are encouraged to walk, and as yet I have not seen any bad effects follow such practice.

CHART 6.



A, Child not taken out. B, Child taken out.

In view of these facts—the effect of deficient exercise on the calcium retention, the influence of confinement in the production of human and experimental rickets, and the frequency with which the disease is encountered in overcrowded houses—I considered it not unlikely that rickets would be exceedingly prevalent in those parts of the world where the people were confined in badly ventilated houses and where sunlight was absent for long periods of the year.

After a fairly extensive search through the diaries and journals of travellers to Iceland, Greenland, and Alaska, parts of the world where the winters are long and dark and where the houses are badly ventilated and devoid of all sanitary conveniences, houses in which many people are huddled together for weeks at a time, I have not come across a single suggestion that rickets is ever encountered. Yet these are just the places where one would have expected *a priori* the disease to have been rampant. True, the Esquimos are described as being bandy-legged, but this is accounted for by the lowness of the roofs of the houses, the heavy ungainly boots that they wear, and the great amount of time that they spend crouched up in their boats. The absence of the disease is the more remarkable when one remembers that for weeks at a time darkness prevails, and during the winter the inhabitants spend most of the time in badly ventilated huts, although it must be admitted that it is just at this season of the year that abundant fat is consumed.

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Glasgow.

SIR ALMROTH WRIGHT'S LECTURE ON THE TREATMENT OF WOUNDS IN WAR.

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IN this short note in reference to Sir Almroth Wright's recent lecture on the treatment of wounds in war I do not propose to criticise his paper; indeed, I am in agreement with a good many of his statements, especially with those on the use of antiseptics in septic wounds. In speaking of the treatment of septic wounds Sir Almroth Wright objects to the use of antiseptics, and in the present state of our knowledge I believe that he is quite right. This is a point which I have taught for years and on which I laid special stress in my paper at the Medical Society last November. Indeed, I would go further than Sir Almroth Wright appears to do in objecting to the practice of syringing out these wounds with antiseptic lotions. I dislike to see septic wounds washed out with antiseptics. That procedure cannot possibly disinfect the wound nor in any way diminish the sepsis even temporarily except by the mechanical removal of the pus, which can be done much more safely by the use of isotonic solutions, and not only so, but the antiseptic may seriously interfere with the antibacterial action of the tissues especially if it is at all a strong solution used under the idea that it will act as a bactericide.

Free drainage and irrigation, referred to by Sir Almroth Wright, are of course well-known and long-established methods of treating septic wounds, and are, in my opinion, the best methods of dealing with them. The only new practical point in Sir Almroth Wright's suggestions, a point which, however, he had made previously, is the use of a strong solution of salt with the view of leading to increased flow of lymph. Curiously enough, it is stated that this acts by osmosis, but that must surely be a slip of the pen. Colloids such as lymph dialyse very slowly or not at all, and practically the only result of placing a strong solution of salt outside a blood-vessel would be the exit of the water and salts of the blood. Any increased flow of lymph which may arise from the introduction of a hypertonic salt solution into a wound will be the result of irritation, and the question then arises whether salt is the best irritant, or whether, indeed, it is wise to use an irritant at all. I must confess that my inclination is against the employment of irritants because I doubt very much whether the lymph does contain all, or indeed the most important, antibacterial substances of the body. My own view is that these substances reside in the tissues themselves to a much greater degree than in the blood and lymph, and the application of an irritant may seriously interfere with the natural processes. However that may be, I shall watch with great interest Sir Almroth Wright's attempts to eradicate sepsis from wounds by what he terms "physiological methods."

The reason why I am writing this note is, however, to emphasise the point on which I am particularly insistent—viz., that while Sir Almroth Wright's studies concern wounds as they reach him at the base hospitals, already in a highly septic state and in a stage in which antiseptics as ordinarily employed are of no avail, there is a preceding period, which he does not come across, in which the septic process has not yet taken root in the wound, and in which it may be eradicated by the proper use of antiseptics. It is on this period that my researches are concentrated, and at this stage the use of antiseptics presents to my mind the only possible chance of success. Our work and Sir Almroth Wright's are in no way antagonistic. He takes matters up at a stage where our suggestions are possibly no longer of any special value or where these suggestions have not been followed or have failed to accomplish their object. But what a change in the whole aspect of military surgery if our plans should succeed! What a saving of suffering and of life! And reports are beginning to come in which show that such success is not improbable. Surely this is the most important point in the treatment of these wounds, and I do not think that we can too often call the attention of the profession to this most important, though short, period in the history of these cases. This is the time for the employment of antiseptics, and I am convinced that if suitable antiseptics are chosen, and if they are thoroughly and scientifically applied, a very considerable proportion of the cases will escape the dangers and the troubles of a septic wound.

It is being constantly said that there is something peculiar and special in wounds in war as compared with those which occur in civilian practice. In my opinion this is not so; it is only a question of degree and not of kind. I have been very much surprised to read in the daily papers accounts of the wonderful discoveries which were being made at the front with regard to the bacteriology of these wounds, of the anaerobic bacteria, the coliform bacilli, the streptococci, and so on. But the same bacteriological flora is common enough in civil injuries, especially in those soiled with earth, and are quite familiar to those of us who have made a study of these matters. Nor are the bacteria in injuries in civil practice confined to the exterior of the wound, as Sir Almroth Wright seems to imply. The whole wound becomes infected just as happens in the wounds which he meets with at the military base hospitals, and septic compound fractures are often just as serious in civil as in military practice. From reading his remarks one would think that all compound fractures in civil practice ran an aseptic course. Alas! far from it. Sir Almroth Wright, when he comes back to this country, will find ample opportunities for continuing his search for a physiological method of treating septic wounds.

The difference between the military and the civilian compound fractures is one of degree and not of kind. In the civilian cases the injury is usually more limited than in those inflicted on the field of battle; there are seldom the long channels in the tissues, difficult of access, in the former which occur in the latter, but there is the same blood clot and the same torn and bulging muscles, rendering the channel irregular, in the one as in the other. And though the infection may be carried in further in the military than in the civilian cases, this does not, I think, mean so much as one might at first sight suppose. The bullets or the pieces of shell soon part with the septic material which they carry in with them, as shown by the frequency with which these bodies become encapsuled. This was an observation made long ago by John Hunter, who built up a theory that if a bullet were in the depth of the tissues the latter did not resent its presence or make any attempt to

remove it, while if it remained near the surface they underwent suppuration with the view of extruding it.

I hope that these two stages in the history of wounds in war, the one before sepsis has become established and the other after it has taken root, will be clearly differentiated in the minds of those who have to deal with them, and that, because the latter cannot be disinfected by our present means, surgeons will not therefore relax their attempts to eradicate the septic elements in the former or early stage while there is still time to do so. It is a terrible attitude to take up that these wounds must necessarily become septic and that it is useless to make any attempt to prevent this occurrence.

TREATMENT OF THE WOUNDED ON BOARD H.M.S. "TIGER" DURING THE NAVAL ACTION OF JAN. 24TH.

BY J. C. KELLY, M.D., B.A. DUB.,
SURGEON R.N.

THERE were two medical distributing stations, one aft and the other forward. I was stationed at the after one, which was situated directly beneath the quarter deck and immediately forward of X turret. We had a plentiful supply of water from two large fresh-water tanks, while hot water could be supplied from a steam geyser. There were two cases of "emergency surgical dressings," one big medicine chest, and a set of drawers containing tourniquets, bandages, strapping, instruments, and all the drugs and medicines most likely to be required. In case of the electric light failing, light could be obtained from six oil lamps, which were fixed in convenient places; besides an operating table we had a small stand for basins and another for instruments.

My first-aid party consisted of about nine persons altogether, including three of the sick-berth staff, the remainder consisting of gun-room and ward-room stewards, cooks, &c. The forward distributing station was quite accessible from the after one by means of the ammunition passage. My senior medical officer and the other surgeon were stationed here, as well as a similar first-aid party consisting of officers' stewards, cooks, &c. Like the after one, the forward distributing station was fitted with hot and cold water, operating table, cases of dressings, &c., and in addition there was an X ray apparatus; the tubes, however, were broken during action owing to the concussion caused by our fire.

It was arranged that after the action the party stationed aft should search for wounded in Q and X turrets and along the port 6-inch battery, and that the party stationed forward should search A and B turrets and the starboard 6-inch battery. We soon had everything rigged up, dressings and lotions out, and the operating table ready in case it would be wanted, and then my party came forward of the bulkhead next the distributing station into the ammunition passage, and there we remained during the entire action.

At 8 A.M. we sighted the enemy off our port bow, and at 9.2 A.M. we fired our first shot, and from that on until the "secure" sounded the firing continued. The time passed quickly, and after the first half hour when the excitement of hearing our own guns fire in anger had passed off, my first-aid party spent the time endeavouring to find out what was happening, and later on when they heard we had been hit they discussed the chances of our going back to Devonport and getting some leave while the ship was being repaired. One or two started reading papers, but they did not do so for long as things became too "hot." Each time we were hit the shell caused a terrific crash, shook the ship, then one could hear any quantity of loose débris and splinters falling.

At about 11.20 our first patient was brought to us, a boy (Case 11) suffering from burns about the face and a sprained ankle. We soon treated him and put him in one of the officers' cabins close by. Very soon after the chief gunlayer (Case 5) walked from Q turret, in spite of his receiving a compound fracture of the right fibula; he was badly burned about the face and left eye, and had a badly lacerated wound in the left hand, fracturing the first metacarpal bone. As we were under a very heavy fire at this time, and with so little armoured protection, I did not care to treat him in the after station, so I sent him to the forward distributing station where his wounds could be more efficiently dealt with.

When the action was over we searched for wounded. I went to Q turret. In the gun house we discovered two men dead, and in the working chamber below we found an A.B. (Case 6). He was suffering from considerable pain in his side, so we put him in a Neil Robertson stretcher, and after hoisting him up into the gun house through a trap-door we eventually got him out of the turret, and from there carried him down to the after distributing station. We strapped his left side, gave him a ¼ gr. of morphia (as he was suffering from a certain amount of shock), and then put him in one of the adjoining officers' cabins. The only other case treated in the after station was another A.B. (Case 8). I then went to the forward distributing station where the remainder of the wounded had been brought. All the injuries of the patients that had been brought here were caused by a shell which exploded in the intelligence office, which was situated under the signal distributing office and gun-control tower where these patients were stationed. This shell also accounted for 8 deaths.

In the afternoon we brought all the patients up from the distributing stations to the sick bay, where their wounds were thoroughly cleansed and again dressed. We arrived back at our base on the following Tuesday morning (Jan. 26th). The three wounded officers were transferred to the hospital yacht, *Sheelah*, and the men to the Naval Sick Quarters, South Queensferry.

CASE 1. *Burns of the face and fracture of left ulna.*—A lieutenant. This officer came to the forward distributing station during action, suffering from burns of the face and scorching of the scalp, the result of a shell explosion beneath the gun-control tower where he was stationed. His hair was badly scorched, but the scalp did not appear to be burnt. The burns about the face were mostly of the first degree. There was a certain amount of shock present, so that morphia, gr. ¼, was given hypodermically the same night. The burns were dressed with picric acid. There was also a small fracture of the left ulna situated about its middle, consisting of a small triangular piece of bone detached from the posterior border of the ulna. On Jan. 26th he was transferred to the hospital yacht *Sheelah* for further treatment.

CASE 2. *Multiple injuries.*—A sub-lieutenant. This officer came to the forward distributing station during the action suffering from multiple injuries received, the result of a shell explosion near the gun-control tower where he was stationed. There was a deep scalp wound on the left side of the vertex about 2 in. long; both membranæ tympanorum were ruptured, causing bleeding from both ears; there was a wound perforating the lower lip, the lower incisor teeth were knocked backwards, and the left angle of the jaw was fractured. On the lower and inner side of the left knee there was a flap of skin and superficial fascia separated up to

its base (about the level of the internal semilunar cartilage), the base being about 3 in. and the length of the flap 2 in. The wound did not involve the knee-joint. On the right thigh there was a burn of the second degree. In the afternoon he was brought to the sick bay, where his injuries were dressed under an anæsthetic. The wound on the inner side of the knee was swabbed with pure carbolic, then sutured. His scalp wound was thoroughly cleansed, then sutured. The other wounds were also carefully cleansed and dressed. The wound perforating the lip was sutured, the suture not involving the mucous membrane. The ears were lightly plugged with gauze. Eight minims of antistreptococcic serum were injected hypodermically the same evening; the usual reaction followed; also morphia, gr. ¼. He was transferred to the hospital yacht *Sheelah* on Jan. 26th for further treatment.

CASE 3. *Abdominal injury.*—A midshipman. This officer was brought to the forward distributing station from the gun-control tower where the pointer of the director was driven into his abdomen just below the xiphisternum, the result of a shell explosion. He also received an incised wound in the right leg and burns of the first and second degree on both legs and genitals. He suffered considerable pain in the region of his abdominal wound, but apparently it did not perforate the abdominal wall. It was treated with iodine solution and dressed with gauze. The wound in the right leg was a small incised one situated at the back of the internal malleolus where the flexor tendons had been partially severed; this wound also received a simple dressing. The burns were treated with picric acid dressings. He was given ¼ gr. of morphia that night hypodermically, also ♏ 8 of antistreptococcic serum. The following morning he stated he had not had a good night. Temperature 104° F.; pulse 108. There were marked tenderness and rigidity in the region of the wound, but none in the lower part of the abdomen. His general appearance was good and there was never any vomiting. He was given another hypodermic injection of morphia, gr. ¼, that night (Monday). The following morning (Tuesday) he stated he felt much better. The temperature had fallen to 99° and the pulse to 99. There was still considerable amount of tenderness and rigidity in the region of the wound. He was transferred to the hospital yacht *Sheelah* for further treatment.

CASE 4. *Fracture of the left femur.*—This patient, a stoker messenger, received the above injury during the action. While descending from the signal distributing office down the escape to the deck below, the shock caused by firing the 13·5 guns caused him to fall and fracture his left femur. He was brought to the forward distributing station, where a fracture in the middle of the left femur was easily diagnosed. He suffered considerably from shock, so morphia, gr. ¼, was given hypodermically and a long Liston splint applied. After the action he was put to bed in the sick bay. As he still suffered from shock, morphia, gr. ¼, was given hypodermically that evening and again the following Monday. He was transferred to the Naval Hospital, Queensferry, on Jan. 26th for further treatment.

CASE 5 *Lacerated wound of the hand; compound fracture of first metacarpal and right fibula.*—Chief petty officer. This patient walked to the after distributing station during the action suffering from the above injuries the result of a shell explosion. On examination there was a compound fracture of his right fibula just above the external malleolus. There was a bad laceration of the left hand, fracturing (compound) the first metacarpal bone. There was also a smaller wound in the right hand, as well as burns about the face and left eye from cordite. The wounds were carefully dressed and the fractured fibula was put up in splints. Morphia, gr. ¼, was injected that night and again the following night. Treated with ♏ 8 of antistreptococcic serum and had well-marked reaction afterwards. He was transferred to the Naval Hospital, Queensferry, for further treatment on Jan. 26th.

CASE 6. *Fractured rib.*—This patient (an A.B.) was brought to the after distributing station from Q turret suffering from severe pain in the left side in the region of the eleventh rib. He received his injury during the action, and it was due to a shell explosion which caused his left side to fall against a supporting piece. On examination there was severe pain on pressure over the lower ribs on the left side; the left side of the chest was strapped. He suffered considerably from shock, so morphia, gr. ¼, was given hypodermically. His abdomen was very rigid, and though at first he complained of no pain, later on he did, and at 8 P.M. he passed 4 oz. of bright red blood per urethram. There was no evidence of urinary infiltration into his scrotum or elsewhere, and a catheter was not passed. His temperature and pulse remained normal. No specially tender spot could be detected in his abdomen, although he kept it rigid. The following day the blood completely disappeared from his urine; his temperature and pulse remained normal, and he felt better, although there was still some rigidity present. He was discharged on Jan. 26th to the Naval Hospital at South Queensferry for further treatment.

CASE 7. *Burns of the face and head.*—A stoker. This patient was brought to the forward distributing station from the signal distributing office during the action suffering from burns of the face and head. The eyes were not affected. Picric acid dressings were applied, and morphia, gr. ¼, was given hypodermically the same night. On Jan. 26th he was transferred to the Naval Hospital, South Queensferry, for further treatment.

CASE 8. *Wounds of the feet.*—This man (an A.B.) came to the after distributing station after the action suffering from wounds in both feet due to splinters from a shell explosion. On the left foot there was a small but deep cut from which he pulled out a piece of shrapnel about 1½ in. long; there was a certain amount of oozing from the wound. There was also another smaller wound on the dorsum of the right foot. Simple dressings were applied. He was transferred to the Naval Hospital, South Queensferry, on Jan. 26th for further treatment.

CASE 9. *Fractured clavicle.*—A stoker. This patient came to the forward distributing station during the action, after being blown back and falling down the fore escape owing to a shell explosion. He received a fracture beween the outer and middle thirds of his clavicle (right). The fracture was put up by the Sayres method. He was transferred Jan. 26th to the Naval Hospital, Queensferry, for further treatment.

CASE 10. *Burns of the left side of face and neck.*—This boy was brought from the fore 6 inch control during the action suffering from burns of the first and second degree of the left side of the face and neck. Picric acid dressings were applied. He was transferred to the Naval Hospital on Jan. 26th for further treatment.

CASE 11. *Burns of the face; sprain of the right ankle.*—This boy was brought to the after distributing station during the action, suffering from slight burns of the face and scorching of the scalp, as well as a sprained right ankle, the result of a shell explosion near the signal distributing office, where he was stationed. There was some shock present, so morphia, gr. ¼, was given hypodermically. Picric acid dressings were applied to the burns, and lead lotion to the sprained ankle. He was transferred to the Naval Hospital, South Queensferry, on Jan. 26th, for further treatment.

I regret at not being able to obtain more details as to the progress the patients made after we discharged them to hospital. They all steadily improved, and some of them, I believe, have returned to duty already. The case of the midshipman (Case 3) gave us some cause for anxiety, as we thought exploratory operation desirable to find out if the parietal peritoneum was perforated; but as his symptoms were not urgent, and considering the very septic condition of the ship, we came to the conclusion such a procedure was too risky. When he was removed to the *Sheelah* no operation was considered necessary. His condition progressed favourably, and he is now convalescent. A fracture of the sternum was subsequently discovered.

None of the patients received any active treatment except the chief petty officer (Case 5), who was operated on the hand for suture of tendons, and the sub-lieutenant (Case 2), who had an operation for septic parotitis resulting from the fracture of the left angle of the jaw. Later on he developed a cellulitis in his left forearm, caused by a piece of cordite which entered at the wrist and fetched up in the middle of the forearm; the piece of cordite was afterwards removed. I believe that the stoker (Case 4) had his fractured femur plated, but I was unable to find out definitely.

EPIDEMIC CEREBRO-SPINAL MENINGITIS.[1]

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MAY I thank the Harveian Society for the honour they have done me in asking me through their secretary to open the discussion on this most important subject? It is one which has always interested me, for in my connexion with the Children's Hospital, Great Ormond-street, it has been possible to study the disease in its endemic form and to compare the features of the endemic with the epidemic type of the disease. Your excellent secretary has wisely allocated certain portions of this subject to other speakers specially skilled in their various departments, and my part will be to give a general review of the subject, leaving it to subsequent speakers to fill in the numerous gaps. I shall more especially deal with the clinical features, diagnosis, and treatment of the disease, leaving it to others to deal with the bacteriology, vaccine-therapy, &c.

Epidemiology of the Disease.

It must be recognised that cerebro-spinal meningitis is no new disease either in its endemic or epidemic form. During the last century epidemics have occurred on the continent, in America, and in this country. The last epidemic in this country was in 1907–08, when it occurred in Belfast and Glasgow. It may be said to be an endemic disease in Norway, and if one studies the excellent monograph on the subject published by Looft one sees that it not only is constantly found in that country, but varies in its incidence not only from year to year but also according to the season of the year. It must be recognised that cerebro-spinal meningitis due to the meningococcus is constantly present in London. It is an endemic disease but has an epidemic period in the spring of each year, the greatest number of cases occurring during the months of February, March, and April, falling off during May and June—only a few cases occurring during the last six months of the year.

It is interesting to compare the course of this disease with that of poliomyelitis, an endemic disease having a seasonal variation showing a curve which begins to rise in June, reaches its maximum in August, falls away to a low level in November. Cerebro-spinal meningitis as an endemic disease affects chiefly children, and especially infants below the age of one year. In the year 1907 epidemic cerebro-spinal meningitis was made a notifiable disease in the county of London and permanently so in 1912. It is interesting to note that in this year also poliomyelitis was made a notifiable disease.

The disease is spread by the transference of the meningococcus from individual to individual. As Professor Andrewes rightly points out, "the disease does not spread as a meningitis; what is spread is the meningococcus; the meningitis is an accident, which happens only in a certain proportion of those invaded by the meningococcus."

Misleading Names under which the Disease is Known.

The names under which this disease is known are somewhat misleading. Epidemic cerebro-spinal meningitis presupposes that the spinal membranes are invariably affected, which is not always the case, for cases of acute meningococcal septicæmia occur in which death supervenes before the meninges are affected. "Spotted fever" suggests that the disease is accompanied by a rash—a symptom which is by no means constantly present. Epidemic cerebro-spinal fever might serve, but even such a name suggests that the spinal membranes must be affected.

Meningococcal fever or septicæmia might be suggested, but that would not certainly solve the difficulty, and would raise bacteriological difficulties which might be harder to deal with than the clinical inconsistencies. Let us stick to the name epidemic cerebro-spinal meningitis, recognising that just as the pneumococcus may at times give rise to infection in different parts of the body—thorax, peritoneum, joints, membranes of the brain—so the meningococcus may in like manner fall on different structures, but seems to have a preference for the membranes of the brain.

Experimental Work.

In 1905 Flexner produced cerebro-spinal meningitis in the monkey by injecting subdurally virulent cultures of the meningococcus. The infective inflammation produced resembled the human infection closely, except that it was often more severe. The inoculation caused severe illness in a few hours and death in from 18 to 24 hours. At the height of the infection a blood invasion occurred. The rapidly fatal instances resembled the fulminating cases among human beings, the other the human cases of average severity. A monkey was immunised and the serum obtained therefrom injected directly into the spinal canal of infected monkeys with favourable results; if injected into the blood and subcutaneous tissues the animals succumb. An immune serum prepared in a horse by alternate injections of dead and living cultures was shown to have similar properties to the serum produced in monkeys. By the use of this serum the mortality, which in untreated cases is about 80 to 90 per cent., fell to 18 per cent. for those treated within the first three days of illness, to 27 per cent. between the fourth and seventh day of illness, and to 36 per cent. when treated after the seventh day. It is important to remember that the mortality among cases occurring towards the end of an epidemic is considerably lower than that at the beginning.

Clinical Features.

Shortly stated, epidemic cerebro-spinal meningitis may be said to be an acute epidemic disease starting with fever, vertigo, severe headache, and vomiting. Delirium is often present, and the patient complains of intense pain in the back and neck and often of a sore-throat. A *rash* may be present over the body, either as a mottling of the skin or as raised erythematous areas with a small central vesicle into which hæmorrhage may occur. The rash is usually distributed over the periphery of the limbs, and is, except for its distribution, like a measles rash. In the acute form of the disease the patient has the appearance of a profound toxæmia. The soft palate is injected, the fauces swollen and red and covered over with mucous secretion which

[1] A paper read before the Harveian Society of London on April 22nd, 1915.

gives them a grey appearance. It is interesting to note that though there is this intense injection of the fauces the gland at the angle of the jaw may show little enlargement.

The patient lies with the legs flexed and the neck held rigid and resents movement. If an attempt be made to extend the legs it is found that they cannot be extended beyond a right angle to the thigh. The patient may be acutely conscious of his condition, and may from time to time become delirious and violent, at other times he may be completely comatose. In an acute case the disease may run its whole course in a few hours, headache, delirium, coma rapidly succeeding one another so that death occurs within 24 hours. In some cases there may be profound septicæmia without any sign of meningitis, and in such cases on lumbar puncture the cerebro-spinal fluid may be found normal. These are cases of acute meningococcal septicæmia.

Now by the side of such an acute disease as is above presented one has the case of a patient with fever, headache, and vomiting, but without any definite signs on examination. In spite of the temperature being high, there is little or no acceleration of the pulse, respiration is quiet, after a few days the temperature falls, the headache becomes less, and the patient is convalescent. What is the nature of such a case? It may be designated "influenza," and few would deny that it may be due to the influenza bacillus. If a lumbar puncture is performed the cerebro-spinal fluid may be found to be turbid and contain meningococci, but the case gets well whether lumbar puncture is done or not, and few practitioners would wish to subject their patients to the inconvenience of a lumbar puncture for a slight febrile attack, and yet such an attack may be the onset of an acute meningitis.

In infants and young children, again, the symptoms and course of the disease often make it most difficult to diagnose. In severe cases with a rash, profound coma, and rigidity of the limbs there is no difficulty. When, however, a rise of temperature is the only sign of illness the difficulty is considerable, and diagnosis can only be made by lumbar puncture and examination of the cerebro-spinal fluid. It must not be thought that such cases are exceptional, they are probably far from rare and pass undiagnosed. In infants blindness is a frequent concomitant of the disease, whilst in adults deafness is more frequent.

As the disease passes into a chronic stage retraction of the head and neck may occur, and in infants marked opisthotonos is a striking feature. In the endemic form occurring annually in London there is a mortality of about 50 per cent., 35 per cent. are left with some mental defect, hemiplegia, diplegia, hydrocephalus, or blindness, whilst only 15 per cent. recover completely. In the epidemic form the mortality varies from 90 per cent. in the earlier period of an epidemic to 30 to 50 per cent. towards the end of the period. These figures are based on the occurrence of the disease before the introduction of serum treatment which has profoundly modified the mortality.

It is known that there are several strains of meningococcus which vary in their infectivity, and that the endemic strain is commonly less virulent than the epidemic—on the other hand, as severe cases do occur with the one strain as with the other.

Diagnosis.

In some cases the symptoms are so distinct that diagnosis is perfectly easy, the headache, vomiting, rash, fever, rigid neck, and flexed limbs giving a clinical picture which is unmistakable. Symptoms similar to the above may be present in other forms of meningitis or in poliomyelitis, and there is only one method of making the diagnosis certain, and that is by lumbar puncture and examination of the cerebro-spinal fluid. Now lumbar puncture is perfectly simple if performed with an instrument suitable to the age of the patient, the patient in the right position and in the right manner. If properly carried out it gives rise to but little pain, and in many cases it is quite unnecessary to give an anæsthetic.

It is impossible here to go into the technique of a lumbar puncture, but failure to reach the canal or obtain the fluid rarely occurs when the puncture is rightly performed. It is advisable that the patient should be in a recumbent position, lying on the right side with the legs flexed and the back bent, and that a fine needle with a stilette be used. If a large needle is used it is much more painful and in young children will not pass the space between the laminæ. Some lumbar puncture needles that I have seen are unnecessarily large. It is important to avoid touching the bone if possible, it always gives rise to more pain, and is likely to cause bleeding into the needle which may block it or contaminate the cerebro-spinal fluid and spoil the cytological examination.

The cerebro-spinal fluid spurts out under pressure. Sometimes it is so thick that it will not flow through a fine needle, but comes out readily under gentle aspiration. All degrees of turbidity are met with, from a slightly opaque to a thin creamy fluid. It is said that the fluid from some cases may be perfectly clear and yet contain meningococci. I have never come across such a case, but they have been recorded by Netter and others. It is recognised that the cerebro-spinal fluid from a case of meningococcal septicæmia may be perfectly clear, and the patient may die from the disease before the cerebro-spinal system is affected. The albumin in the fluid is increased from 0·02 to 0·2 or even to 1 per cent.; the cells are mostly polymorphonuclear in character and the meningococcus can be seen within and outside the cell. The normal sugar reaction of the fluid is absent.

As the case progresses and improvement takes place the fluid becomes clearer, the meningococci less frequent, the cells less numerous and changed in character, so that in the later stages of the disease the greater proportion of the cells are lymphocytic.

Treatment.

Having made the diagnosis treatment should be simple if we accept the experimental and statistical evidence produced by Flexner with regard to the use of serum. The mortality which in untreated cases amounts to 70 to 80 per cent. is brought down to from 25 to 27 per cent. Unfortunately there are various strains of the meningococci, and the serum obtained from a horse immunised against certain strains of meningococci is not potent against all strains. It is, of course, possible always to add one more strain to a horse already immunised, for I believe that such a horse receives about every 14 days a further injection of meningococci, so that the serum of the horse may be made polyvalent to any number of strains. Flexner showed that

subcutaneous and intravenous injection of the serum had no effect in diminishing the mortality in cases of meningitis.

Methods of Treatment.

The following methods of treatment will be discussed:—(1) Lumbar puncture; (2) intrathecal injection of serum; (3) treatment with soamin; and (4) vaccine treatment.

1. *Lumbar puncture.*—This alone is often of considerable value in treating cases of cerebro-spinal meningitis. It frequently relieves many of the acute symptoms. It may be repeated on several days in succession with advantage; it is also of value in estimating the progress made by the meningitis. Combined with this, irrigation of the spinal canal with normal saline solution may be used. This injection can be done either with the syringe or by gravitation method with a funnel and rubber tube attached to the lumbar puncture needle. It is important to watch the pulse whilst the fluid is being run into the canal and to avoid any increase in the cerebro-spinal pressure.

2. *Intrathecal injection of serum.*—There are several points to be considered in the intrathecal injection of serum. First, what serum should be used. There are various sera on the market prepared by Flexner, Lister Institute, Mulford's, Burroughs and Wellcome, Parke Davis, &c. Flexner's (now prepared by the Department of Health, New York) I have used most frequently. Some of the others I have used, but it is most difficult to appraise the value of the serum, for it may not be antitoxic to the special strain of meningococcus with which one is dealing.

Injection of the serum.—Lumbar puncture is performed and the spinal fluid is allowed to flow out. The quantity that flows away must depend on a variety of circumstances—the age and size of the patient, the amount of pressure, but at least 20 to 30 c.c. should be obtained. Sometimes it flows out so readily that 4 to 5 ounces are obtained.

Sophian insists on the value of watching the blood pressure whilst the fluid is flowing away, and if there is a fall of more than a few millimetres stop the flow and begin to inject the serum. The injection of the serum does not, however, tend to raise the blood pressure, but tends to make it fall still further, so that from the time of the lumbar puncture to the completion of the injection of the serum there may be a drop of 20 to 30 mm. of mercury. Sophian is entirely guided by the blood pressure as to the quantity of cerebro-spinal fluid removed and the quantity of serum introduced—and any pressure in injecting the serum produces a rapid fall of blood pressure. The amount of serum introduced must vary according to the age of the patient. In young children 10 c.c. can usually be introduced, whereas in adults 20 to 30 c.c. or more can be introduced.

Method of introduction.—The usual method of introduction is by a syringe, and having always used this method I am of opinion that the pressure exerted can easily be regulated. On the other hand, Sophian insists on the advantage of giving the serum by the gravitation method and controlling its administration by the blood pressure. He says: "My ordinary procedure in an adult case, beginning with an average blood pressure of 110 mm. of mercury, is to stop the further withdrawal of fluid if there is a moderate drop in blood pressure, for example, 10 mm. of mercury; in children 5 mm. If there is no change in the blood pressure the fluid may be allowed to flow away till the normal pressure is reached, roughly estimated by counting the drops of fluid as they flow from the needle. One drop of fluid every 3–5 seconds corresponding to a normal pressure."

The serum having been carefully warmed to the body temperature is now injected. The blood pressure drops and continues dropping steadily as the larger quantity of serum is injected. After there has been an initial drop of 20–30 mm. of mercury the blood pressure begins to drop relatively much faster if more serum is injected. Thus if 15 c.c. of serum cause a drop of 20 mm. of mercury in the blood pressure, injecting only a few more c.c. of serum may cause a sudden drop of 40 more millimetres, making a total drop of 60 mm. The gravitation method of administering serum is excellent, but in practice it is not easy to carry out nor to control by blood-pressure observation, and the syringe method is to me more convenient. The quantity of serum injected must be regulated by the condition of the patient; if it flow in easily 20 c.c. is an average dose. After the serum has been injected the patient should be tilted so that the head is lower than the buttocks, in order to allow of the serum, which is of greater specific gravity, gravitating towards the brain.

How many and how often should injections be given?—As soon as the diagnosis has been made the first injection should be given, and this should be repeated every 24 hours and the fluid examined on each occasion. The important indication for the continuation or discontinuation of injection is the number of organisms present in the fluid. At first they are numerous, intra- and extra-cellular; later they become intracellular and finally disappear. As a rule, four to six injections are required to bring about the result, and this is the number which Flexner advises. The opacity of the fluid cannot always be taken as a guide; as a rule it becomes less turbid, and a fluid which rapidly becomes clear is an indication of good prognostic value.

It is, I think, a mistake to go on with frequent injections of serum after the acute stage of the disease has subsided. Lumbar puncture by itself will often relieve the symptoms, and it is advisable to do this from time to time both for this purpose and also to see the condition of the cerebro-spinal fluid.

3. *Use of soamin.*—Soamin was introduced in the treatment of trypanosomiasis about 1907, and about this time was used in the treatment of syphilis. Dr. George Low used it with success in the treatment of cerebro-spinal meningitis in Africa, and has advocated its use for the disease in this country. It is administered in 1 to 3 grain doses dissolved in water and injected intramuscularly on alternate days. For the treatment of acute meningococcal septicæmia it would seem a rational method of treatment, but it is difficult to see how it can have an effect on a meningitis. The greatest objection to its use is, however, its toxic effect in producing optic atrophy and blindness. Not a few cases of such blindness were produced by the use of the drug when it was given for syphilis in 1908 and 1909.

It is sometimes argued that any remedy must be used in such a severe disease as cerebro-spinal meningitis, but recovery with loss of sight must, I fear, be regarded as a greater disaster than death. It is stated that there is no case on record where optic atrophy has been caused by less than 60 grains and that this is then a safe total amount to be

given. Considering what liability there is for the optic nerve to be affected by the disease itself I should personally feel disinclined to use a drug which tends to produce optic atrophy. If it is desired to use an arsenic preparation I would suggest salvarsan or neosalvarsan. Both preparations have had a long trial and do not appear to produce optic atrophy.

4. *Vaccines.*—The discussion on the use of vaccines in the treatment of the disease has been assigned to Dr. Colebrook, and I will not encroach on his sphere of action. I hope, however, he will make quite clear the possible value of vaccines in the prevention as distinct from the treatment of the disease.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE PSYCHOLOGY OF TRAUMATIC AMBLYOPIA FOLLOWING THE EXPLOSION OF SHELLS.

BY HUGH S. PEMBERTON, M.B., CH.B. LIVERP.,
LIEUTENANT, R.A.M.C.

THE paper by Mr. J. H. Parsons in THE LANCET of April 3rd on the above subject has reminded me of a case under my care which presented several features of psychological interest. The facts are as follows.

Sergeant ——, belonging to a battery of field artillery under my medical charge, was working his gun under rather heavy shell fire on March 14th. His gun was No. 1. A direct hit was made on No. 2 gun with high-explosive shell, killing three men. I saw Sergeant —— shortly afterwards, and although naturally excited he appeared otherwise normal. He went on working his gun until dawn the next day, when he collapsed and was found lying across one of the disembowelled corpses. In all he had been at work for about 12 hours continuously, during which time the battery had fired between four and five hundred rounds. I saw him again a few hours later; he was conscious but very feeble, and obviously much shaken. There was considerable amblyopia and distinct contraction of the fields of vision (rough test); no change in colour vision. The sense of taste was much blunted; he could barely distinguish between salt and powdered quinine tablets laid on the tongue. The sense of smell was practically absent, but this was not of much importance, as he stated that his smelling powers were at all times small. Hearing was naturally much affected, but not more so than that of several other men in the same battery; no tympanic fractures were discernible. There were no changes of cutaneous sensation in the face, arms, or trunk, but both thighs, from about the apex of Scarpa's triangle to the knee, showed curious alterations. There was partial anæsthesia—that is to say, a normally painful pin-prick was felt as a tactile sensation, while touching the skin lightly with cotton-wool was not felt at all. The patient merely complained of "numbness" in these areas. The motor changes were not striking; he naturally showed great fatigue in practically every muscle; the eyelids were half-closed, but there was no nystagmus. On the other hand, he walked slowly with a distinctly spastic gait; the knee-jerks were brisk. Other reflexes appeared normal; the plantar reflex was of the flexor type. I sent him back to the wagon lines for a week where, while the sensory changes gradually disappeared, symptoms of mental distress seemed to increase. He still walked feebly and spastically, and reverted continually to the sight of the dead men at the next gun, one of whom was a friend of his. I finally sent him into hospital and he is now, I believe, in England.

There are several obvious factors in the production of such signs and symptoms. 1. Excitement during a prolonged and somewhat critical attack. 2. Over-stimulation of eyes and ears. The flashes of night firing are very brilliant, while many batteries close together and all firing rapidly invariably produce temporary deafness among the gunners. 3. Some natural fear from close hostile bursts. 4. Disgust at the sight of the killed, two of whom were decapitated and one disembowelled. 5. Great physical and mental fatigue from continuous laying of the gun during 12 hours.

But why these factors, which must have been operative to some degree at least in all those near, should produce those results in this particular man I leave it to others to attempt an explanation.

On Active Service.

NOTE ON A CASE OF CEREBRO-SPINAL MENINGITIS:

THE TENACITY OF THE MENINGOCOCCUS.

BY HENRY J. ALFORD, M.D. LOND.,
MEDICAL OFFICER OF HEALTH OF TAUNTON.

THE following case may be of interest in showing the length of time that the meningococcus may be found in the naso-pharynx after apparent recovery from the disease.

A case of cerebro-spinal meningitis was notified to me on March 2nd, 1915, on the morning of which the patient died, after an illness of five days. He was a boy, aged 9 years. On making inquires into the case I found that his elder brother had returned from Deal (on his discharge from the army) on Feb. 13th. He complained of feeling ill, with pains in his head and limbs, and he went to bed, sleeping in the same bed as his younger brother already mentioned. In about a week he felt quite well and returned to his work in this town. On March 31st I took a swab from his naso-pharynx and sent it immediately to the County Bacteriological Laboratory at Weston-super-Mare, and on April 4th I received a certificate from Dr. W. G. Savage stating, "Meningococcus present."

The case is interesting as showing that although the germ will only live a few hours on the swab, it may do so for at least two months in the naso-pharynx

Taunton.

A "FLY-DANGER" EXHIBITION.—There will shortly be opened at the Zoological Gardens, Regent's Park, London, N.W., an exhibition for the purpose of demonstrating to the public the best ways of combating the danger which arises from the disease-carrying habits of the house-fly. Traps of all kinds will be shown, and the preventive measures to be taken where it is necessary to collect manure heaps for garden and horticultural purposes indicated.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

Leukæmia.

A MEETING of this section was held on April 27th, Dr. A. E. GARROD, Vice-President, being in the chair.

Dr. A. J. HALL read notes of a case presenting symptoms of Lymphatic Leukæmia of acute onset terminating in complete recovery. The patient, a man aged 26 years, consulted his medical attendant in March, 1911, on account of swelling of the glands on the right side of the neck. He stated that he had noticed this coming on for a few days previously, but as it had given him no pain he did not seek advice earlier. During the next few days the swelling gradually increased and became slightly painful. He also felt shivery and out of sorts towards the late afternoons so that he went to bed early. During the last few nights he had been hot and sweated. At this time he did not complain of any sore-throat, nor could any cause be found for the glandular enlargement. Slight albuminuria was present, otherwise there was nothing abnormal. When seen by Dr. Hall six days later there was a large mass of glands in the right side of the neck extending from the clavicle to the edge of the jaw. Individual glands could be distinctly felt, fairly soft, but not discrete. They were painless and not tender on palpation. Besides this mass, solitary enlarged glands could be felt on both sides of the neck, both axillæ, and both groins. They were all firm and painless. The spleen was felt about three-quarters of an inch below the costal margin. He did not look anæmic. There was no sore-throat; his teeth were in good condition. There were no hæmorrhages. A blood examination showed: Hæmoglobin, 96 per cent. (Haldane); red corpuscles, 5,400,000; leucocytes, 32,000; lymphocytes, 96 per cent.; and polymorphonuclears, 4 per cent. No eosinophiles were seen, and there were no evident changes in the red cells. He had some pain in the glandular mass. His temperature was 101° F. in the evening. A provisional diagnosis of acute lymphatic leukæmia was made, and he was put on to liquor arsenicalis. After two days the glands were smaller and the patient complained for the first time of sore-throat on the right side. Later, vomiting occurred. A differential count was as follows: Large lymphocytes, 85·2 per cent.; small lymphocytes, 4·4 per cent.; and polymorphonuclears, 10·4 per cent. No eosinophiles were seen in counting 300 cells, nor were there changes in the red cells. The right tonsil became more painful and was covered with an exudate. The spleen extended lower in the abdomen. After this the improvement was steady and continuous week by week. In July the glands were only just palpable, and the spleen could hardly be felt. In August he was able to go shooting. From that time to the present he had remained in excellent health. Dr. Hall remarked that at the time of the acute onset the diagnosis of acute lymphæmia was provisionally made. The absence of severe anæmia, great prostration, and any tendency to hæmorrhage, together with the rapid and complete recovery, which had remained uninterrupted for four years, suggested that such provisional diagnosis was incorrect and that the case belonged to the category of lymphocytosis associated with cervical and general adenitis, to which attention had been more recently drawn. The existence of such cases should make our prognosis somewhat guarded in atypical cases suggesting acute lymphæmia.

Dr. HALL also narrated some cases of Myelogenic Leukæmia. 1. A case of chronic myelæmia treated by X rays in which, after a severe exacerbation, complete subjective recovery took place enabling the patient, a man aged 34, to perform his full work as electrician in a colliery for nearly three years. After this another severe exacerbation occurred lasting for three months, in which the liver became enlarged, with ascites; choked discs occurred on both sides with impaired vision and some hæmorrhages. With further X ray treatment all these symptoms disappeared and he had a further period of five months with complete subjective recovery and was able to continue full work. A third acute exacerbation followed ending in death about five months later. Particular stress was laid upon the long duration of the patient's first improvement, and the complete, though short, subjective recovery after the second exacerbation, when his leucocyte count was never below 300,000 and sometimes more than double that, and the spleen and liver were much enlarged. 2. Chronic myelæmia treated by X rays, with complete restoration to working health for about six months. During this time the leucocytes dropped to normal and remained so; the spleen from being extremely large was only just palpable. The patient died after a few days' acute illness which was called "pneumonia." 3. A chronic myelæmia in a woman, in whom the very large spleen had become completely dislocated so as to rest on the floor of the pelvis and form a large median tumour rising up into the abdomen and reaching above the navel. In the absence of a blood count the tumour had been diagnosed as pelvic in origin, and an exploratory laparotomy performed. Dr. Hall also spoke of a case of acute leukæmia associated with very severe and persistent pains in the bones.

Dr. F. PARKES WEBER read a short paper on an instance of Long Quiescence of Leukæmia. The patient, then aged 63, sought hospital advice in March, 1909,[1] for what she described as "bearing-down pains," "as if she were going to have a child." These pains seemed to come on when she became fatigued from walking, &c. Nothing abnormal was detected by gynæcological examination, but the spleen was found to be greatly enlarged, extending downwards decidedly beyond the anterior superior iliac spine. The liver could not be felt. The inguinal lymphatic glands were moderately enlarged on both sides, the axillary glands (on both sides) could only just be felt, and the cervical glands were apparently not enlarged at all. From March 16th to May 27th, 1909, the patient was in the German Hospital for treatment by atoxyl injections and radium applications (Dr. N. S. Finzi). The spleen distinctly decreased in size under the treatment, and the lymphatic glands in the groins became scarcely larger than they are in some healthy individuals. On Dec. 6th, 1909, the spleen did not quite reach the level of the anterior superior iliac spine. The following table shows the results of blood examinations up to the end of the year 1909:—

—	March 4, 1909.	March 29, 1909 (before radium treatment).	May 26, 1909 (after radium treatment).	Dec. 6, 1909.
Red cells per cubic millimetre of blood	4,100,000	4,176,000	3,800,000	5,740,000
Hæmoglobin per cent.	80	—	75	82
White cells per cubic millimetre of blood	57,000	43,200	12,000	47,120
Differential Count of White Cells per cent.				
Lymphocytes	94·0	99·0	84·0	89·4
Neutrophile polymorphonuclears	0·8	0·5	14·0	10 0
Large hyalines	2·4	—	—	—
Intermediates	2·8	—	—	—
Eosinophiles	0	0·5	2·0	0·2
Basophiles	0	—	—	0·4

The differential count on March 4th was kindly made by Dr. A. E. Boycott. Both eosinophiles and mast-cells were found, though none were present amongst the cells counted. The red cells appeared normal. No nucleated red cells were ever noted. Dr. Weber was able to examine the patient again on Dec. 4th, 1911, when she complained of rheumatic-like pains in her feet, but looked well. The inguinal glands were moderately enlarged on both sides, and the spleen could be felt extending down to below the anterior superior iliac spine. Blood examination (Dr. G. Dorner): Hæmoglobin, 70 per cent.; red cells, 5,380,000 per cubic millimetre of blood; white cells, 95,600. The differential count of white cells gave: Polymorphonuclear neutrophiles, 3·2 per cent.; lymphocytes, 96·6 per cent.; eosinophiles, 0·2 per cent. The erythrocytes appeared

[1] See F. P. Weber, Case of Chronic Lymphocytic Leukæmia without Anæmia, Transactions of the Medical Society of London, 1910, vol. xxxiii., p. 364.

normal and no nucleated red cells were seen. In March, 1914, owing to the kindness of Dr. Garrod and his house physician, Dr. A. Geoffrey Evans, Dr. Weber examined the patient again while she was temporarily in St. Bartholomew's Hospital. She looked much the same as before, and complained of a little giddiness. A medical man, who had chanced to notice the enlarged spleen, had sent her to the hospital. The blood count showed: Hæmoglobin, 77 per cent.; red cells, 5,160,000 per cubic millimetre; white cells, 123,800. A differential count of the white cells showed that 96·5 per cent. were lymphocytes. Dr. Weber said that looking back on this case it appeared doubtful whether the symptoms which from time to time induced the patient to seek medical advice had any causal connexion with her chronic lymphocytic leukæmia, although in 1909 a real improvement was perhaps associated with the reduction in the size of the spleen by the radium and atoxyl therapy. In chronic lymphocytic leukæmia extreme enlargement of the spleen, as in this case, was an unusual feature, and perhaps the absence of anæmia had some prognostic importance. Might not this absence of anæmia be taken as showing that the red bone-marrow was not overwhelmed by the leukæmic disease, and that (in spite of the leukæmia) it remained able to maintain its normal erythropoietic activity, which was so essential to the well-being of the whole organism? It was quite conceivable that cases similar to the present one occurred in which the total number of white cells was much less than in it. The possibility of such a case being one of so-called "Banti's disease" (an example of permanently or temporarily "compensated" Banti's disease, without any considerable anæmia) might arise, but he believed that in all cases of chronic "Banti's disease," as well as in practically all cases of chronic splenomegaly, apart from the leukæmias, the tendency was towards a leucopenic blood count rather than towards an excess in the number of white cells. A condition of chronic splenomegaly combined with a numerical excess of white cells should always arouse a suspicion of the case being one of chronic leukæmia (in a more or less quiescent state).

Sir WILLIAM OSLER, who had seen Dr. Hall's case, said that it presented the clinical features of acute leukæmia, and the examination of the blood corresponded. He could not remember having seen a case with a lymphocyte count above 90 per cent. The only characteristic feature absent from the symptoms of Dr. Hall's case was purpura.

Dr. JAMES GALLOWAY said that he had had many opportunities of seeing the effects of treatment by means of X rays. The most striking result had occurred in the first case he had had treated in this way. It was one of myelæmia, the patient being extremely ill. The amount of improvement was wonderful and the patient lived for five years. Ultimately all the hæmopoietic processes seemed to cease and all the blood cells diminished. He had discovered no means of determining which cases were likely to be benefited by X ray treatment and which made worse. He also could remember a case in which mental symptoms developed resembling those of acute alcoholism.

Dr. W. IRONSIDE BRUCE spoke of the methods which he employed while treating such cases with X rays. He used a felt filter, for without a filter skin changes were sure to follow. The same reduction of the white cells occurred with the filter as without it. He preferred large infrequent doses rather than small continuous ones, and awaited the result of each dose. He made a practice of keeping the number of white cells as nearly as possible at 40,000; below that number they often dropped suddenly. He had not found that exposing the ends of the long bones, either alone or together with exposure of the spleen, was more beneficial than exposure of the spleen alone to the action of the rays. Speaking of the results of this form of treatment, he said that an effect was usually noticeable in the blood after two or three weeks. Improvement occurred in the patient's condition even in the absence of a fall in the leucocyte count. He did not think that the treatment influenced the ultimate prognosis, but the temporary improvement was very encouraging.

Dr. PARKES WEBER was of opinion that no case of leukæmia had ever been cured. He took the view that Dr. Hall's case was not one of acute leukæmia but of lymphocytosis due to infection. The nature of the infection in such cases was unknown.

Dr. HALL, replying to the discussion, commented on the absence of any reference to benzol treatment, and stated that in the only case he had tried it the result had been disappointing. There was a slight diminution of leucocytes for a short time after first giving it, but this was not maintained.

SECTION OF DERMATOLOGY.

Exhibition of Cases and Specimens.

A MEETING of this section was held on April 15th, Dr. J. J. PRINGLE, the President, being in the chair.

Dr. G. PERNET showed a Rodent Ulcer of three years' duration, in a man aged 26, and commented on the early age at which it had commenced.—The PRESIDENT, Sir MALCOLM MORRIS, and Dr. J. H. SEQUEIRA referred to similar cases seen at a less advanced age.

Dr. PERNET also brought forward a young man who exhibited extensive picric acid staining of the skin and hair due to his work, which was that of filling high-explosive shells.—Dr. S. E. DORE, Sir M. MORRIS, and Dr. A. M. H. GRAY referred to the discolouration of the urine sometimes caused by the absorption of picric acid in the treatment of ringworm, burns, and other skin conditions, but which generally was unaccompanied by constitutional symptoms, but Dr. H. W. BARBER recorded one case in which toxic symptoms occurred in a child.

Dr. GRAHAM LITTLE exhibited an Ulcer on the Foot due to several closely repeated X ray applications for a wart on the sole which had been administered by a layman. He asked for suggestions as to prognosis and treatment.—A general discussion ensued as to the value of X rays in the treatment of warts, in which the PRESIDENT, Dr. W. K. SIBLEY, Dr. H. G. ADAMSON, Dr. DORE, Dr. PERNET, Dr. J. M. H. MACLEOD, Dr. SEQUEIRA, and Dr. P. S. ABRAHAM took part, various opinions being expressed as to the value and limitations of the procedure.

Dr. LITTLE also brought forward a case of Folliculitis Decalvans of the Scalp of several years' duration in a lady aged 55, who also presented the condition of keratosis follicularis of about six months' duration in the axillæ, bends of the elbows, groins, and back; the latter lesions simulated those of Darier's disease, but the association with lesions of the scalp had not, as far as he knew, been reported.—The PRESIDENT, Sir M. MORRIS, Dr. SEQUEIRA, and Dr. MACLEOD, while agreeing with the diagnosis of folliculitis decalvans, were inclined to adopt the view that the lesions on the body were probably early Darier's disease, but Dr. ADAMSON expressed the opinion that the lesions of the latter disease were not essentially follicular.

Dr. SEQUEIRA brought forward a patient suffering from Gummatous Syphilis and Diabetes Insipidus. He referred to several similar recorded cases as supporting the view that diabetes insipidus was commonly of syphilitic origin.—Mr. J. E. R. MCDONAGH pointed out that this correlation was more marked in congenital than acquired syphilis. He was inclined to attribute the condition to arterial disease.—Dr. PARKES WEBER and Dr. KINNIER WILSON accentuated the relationship of diabetes insipidus to syphilis, the latter suggesting that the pathogenesis of the condition was a certain degree of basal meningitis with pressure in the floor of the third ventricle in the region of the pituitary body.

Dr. WILSON and Dr. DORE exhibited a case shown at a previous meeting of a man who had lived in the tropics and who had various patches of thermo-anæsthesia and other indications of a peripheral neuritis, as well as bullæ on the feet and thickening of the skin of the hands with nail changes. In their opinion the bulk of evidence favoured the diagnosis of leprosy.—Dr. PERNET accepted the suggestion of the exhibitors, but Dr. ABRAHAM and Dr. MACLEOD thought that further evidence ought to be adduced before accepting so grave a diagnosis.

Dr. DORE showed cultures from a case of Favus, which were discussed by Dr. MACLEOD and Dr. R. A. BOLAM.

Dr. SIBLEY demonstrated a typical case of Epidermolysis Bullosa or congenital tendency to the formation of bullæ from trivial injury in a woman aged 50. He referred to an apparently identical condition developing after traumatism during adult life.—The case exhibited was discussed by the PRESIDENT and Dr. ADAMSON, who had seen it on several occasions during the previous 17 years.

Dr. SEQUEIRA exhibited two Polish children with very extensive Favus of the scalp and trunk.

Dr. HALDIN DAVIS showed a girl with extensive Ulceration of the Face and Nose due to congenital syphilis, and asked for opinions as to the value of salvarsan and neo-salvarsan in such cases.—Dr. BOLAM, Dr. MACCORMAC, Dr. GRAY, and the PRESIDENT strongly advocated the use of salvarsan when the ulceration was active, but Dr. SEQUEIRA thought the administration of mercury by inunction and potassium iodide internally would be equally efficacious.

Dr. A. DOUGLAS HEATH presented a case of very unusual, extensive, deeply Pigmented and Atrophic Lichen Planus in a man, aged 56, which was said to have developed at the age of 3 months. On the hands the lesions were verrucose. Fresh lesions, which were constantly developing, were characteristic lichen planus papules, but there were no lesions of the mucous membranes.—Dr. Heath's views were generally accepted by the PRESIDENT, Dr. DORE, Dr. ADAMSON, and Dr. MACLEOD.

Dr. SEQUEIRA and Dr. JENKINS OLIVER showed cultures of Microsporon Ringworm from mother and child.

NORTH STAFFORDSHIRE MEDICAL SOCIETY.—A meeting of this society was held on April 15th at the North Staffordshire Infirmary, Dr. John Russell, the President, being in the chair.—Mr. A. W. Gill showed three cases of Congenital Heart Disease in children aged respectively 4, 8, and 9 years.—Mr. R. Alcock showed: (1) Sarcoma of Knee (pathological specimen); (2) Melon Seed Bodies from Compound Palmar Ganglion (pathological specimen); (3) patients undergoing treatment with Salvarsan; and (4) a case of Malignant Pustule.—Mr. S. McMurray showed cases of Congenital Nystagmus and Miner's Nystagmus.—Mr. W. Webster showed: 1. A woman exhibiting Sulph-hæmoglobinæmia or Enterogenous Cyanosis. 2. Two brothers with Myopathy of Pseudo-hypertrophic Type. 3. Large Tumour of Brain in Inferior Parietal Region, which gave rise to no localising symptoms. When the brain was removed post mortem a large gliosarcoma in the inferior parietal region was found. 4. A case of a young woman with Amyotrophic Lateral Sclerosis of Charcot. 5. Two Prostates removed by Freyer's method.—Dr. Harold Hartley exhibited patients suffering from (1) Secondary Cancer of Cervical Glands; (2) Lympho-sarcoma of Neck; (3) a Myxoma of Bone (pathological specimen); and (4) a pathological specimen illustrating the complete operation for removal of a cancer of the breast.

LONDON DERMATOLOGICAL SOCIETY.—A meeting of this society was held at St. John's Hospital on April 20th, Dr. W. Knowsley Sibley being in the chair. At the clinical meeting which followed a series of cases were shown by Dr. Morgan Dockrell, Dr. J. L. Bunch, Dr. Sibley, Dr. Simonds Gooding, and Mr. C. H. Mills.—Mr. C. R. Kempster read a paper entitled "The Inhibitive Action of X Rays upon Malignant Growths," and showed a case of epithelioma affecting the tip of the nose which had been entirely cured by a few exposures to the X rays. He also exhibited photographs and microscopical specimens of a case of epithelioma of the leg which had also been cured by the X rays.—Dr. Dockrell, Dr. Sibley, and Dr. Gooding joined in the discussion.

ROSYTH AS A GARDEN CITY.—The construction of the Rosyth Naval Base had not proceeded far when the need for permanent dwellings in the vicinity of the works became apparent, and this need has grown more urgent as the scheme progresses towards completion. A desire was early shown to make Rosyth a community which should be free from the more sordid housing features that are found in most industrial centres, and negotiations to develop the area on garden city lines were carried on by local authorities, interested proprietors, and the Admiralty. A start is to be made in the near future by the Scottish National Housing Company, which is to build up 270 acres on lines approved by the Admiralty. As an initial step the company will put in hand 150 houses, to be rented at figures varying from £16 to £25, and architects have been asked to submit sketch plans for the scheme. The company's aim is to have the houses ready by October, and it is intended to erect about 3000 houses within the next five or six years.

Reviews and Notices of Books.

An Introduction to the Study of the Endocrine Glands and Internal Secretions.

By Sir EDWARD SCHÄFER, Regius Professor of Physiology, University of Edinburgh. Leland Stanford Junior University Publications. University Series. 1914. Pp. 94. Price 75 cents.

THIS monograph is published by Stanford University, California, and in it we have the Lane medical lectures delivered in 1913. Professor Schäfer is not, by the way, "Regius" professor, for the professor of physiology in the University of Edinburgh is appointed not by the Crown but by the curators of the University.

There is no one more competent to deal with endocrine glands than Professor Schäfer, who has contributed much to our knowledge of what was once a heterogeneous grouping of so-called ductless glands. The five lectures deal with (1) general considerations regarding internal secretions and the organs which furnish them; (2) the functions of the thyroid apparatus; (3) of the adrenal apparatus; (4) the pituitary body; and (5) the internal secretions of the pineal gland, of the alimentary mucous membrane, of the pancreas, and of the sexual glands.

The term "endocrine gland" is used by the author to indicate "an organ which is known to form some specific chemical substance within its cells and to pass this directly or indirectly into the blood stream." Instead of the term "internal secretion" the author uses the term "endocrine" to denote substances of a specific nature like the active chemical agents which are produced by the ductless glands. Specific active chemical agents are also passed into the blood by organs other than ductless glands—e.g., the pancreas. The author introduces certain new terms. As endocrine glands produce substances which cause depression or cessation of function as well as those that excite function—hormones—for the former the term chalone, from a Greek word "to make slack," is introduced. *Chalone* is "an endocrine product which inhibits or prevents the activity of an organ or tissue, as distinguished from a *hormone*, which excites the tissue to increased activity." The term hormone he employs in the sense in which it is used by its inventor. There is more nomenclature as represented by the general title "antacoid substances" or simply "antacoids." These are specific organic substances formed by the cells of one organ, which pass into the blood to produce effects upon other organs similar to those produced by drugs.

Descriptive details necessarily make up a large part of the text, but here and there the author offers much critical and suggestive comment. In Lecture II., which deals with the thyroid apparatus, we have additional new nomenclature. "The antacoid of the parathyroid ('parathyrine') is probably of chalonic, i.e., of inhibitory nature." The term "thyrine" is used to denote the active principle of the thyroid, "whether it is identical with, or contained in, the iodo-thyrin of Baumaunn or not." Another suggestion is made regarding the "chromaphil substance" of the medulla of the adrenals. As adrenalin "has a commercial attachment it is better to employ the neutral expression *adrenine* in place of it." The

hypothetical antacoid supposed to be derived from the islands of Langerhans of the pancreas is called insuline.

The monograph gives an admirable, comprehensive, critical, and suggestive, yet not too diffuse account of the problems and practical importance of the now vast field associated with the terms ductless glands and internal secretions. There are no illustrations and but few references to the vast literature of the subject. There is neither preface nor index, but only the subject matter of the lectures themselves.

The Commoner Diseases, their Causes and Effects.

Translated from the German of Prof. Dr. L. JORES, of Marburg, by W. H. WOGLOM, M.D., Assistant Professor in Columbia University, N.Y. With 250 figures in the text. London and Philadelphia: J. B. Lippincott Company. 1915. Pp. xvi. + 424. Price 16*s.* net.

IN 1913 Professor Jores, at that time professor of pathological anatomy at Cologne, published an excellent volume containing 34 lectures on pathological anatomy, entitled "The Anatomical Bases of Important Diseases." This has been translated by Professor Woglom with considerable freedom, as his rendering of the German title *Anatomische Grundlagen wichtiger Krankheiten* may be taken to show, and with substantial success.

The lectures cover a great deal of ground, but are not unduly long or drawn-out. The first three deal with morbid conditions of the blood; then follow nine on vascular and cardiac disease, embolism, infarction, and bacterial infections of the blood. Various acute and chronic diseases of the lungs are next considered; tuberculosis of the lungs and other organs is described in four lectures. Without giving further details as to the contents of the book, one may say that it gives an accurate and well-proportioned view of both general and special pathological anatomy. It is designed for advanced rather than for early students of medicine, and is admirably calculated to supply the wants of medical practitioners who wish to bring up to date their knowledge of pathology. The illustrations are numerous, well chosen, and well reproduced; they are perhaps less sharply and brilliantly printed in the translation than in the original, because the paper used in the German edition is more white and glossy. The German original forms an admirable text-book for medical students who feel it necessary to learn to read German; its matter is sound, and its style is characteristic of the average German writer.

The translation by Professor Woglom is unusually happy; he has cut up and rearranged the often cumbrous and involved sentences of the German original with great skill, yet without the sacrifice of accuracy in the rendering. The price of the translation in England is the same as that of the original.

Investigation into Scrapie.

By J. P. M'GOWAN, M.A., M.D., B.Sc. Edin., M.R.C.P. Edin. With an appendix on a case of Johne's Disease in the Sheep. Edinburgh: William Blackwood and Sons. 1914. Pp. 116.

THIS book gives a history of the disease known as "scrapie" in sheep, and contains an account of Dr. M'Gowan's researches into the malady. The funds for the investigations were furnished by the Board of Agriculture for Scotland and were administered by a committee from the East of Scotland College of Agriculture and the Board.

In 12 chapters of 111 pages the author discusses the subject, describes his experiments, and advances his conclusions. The history of the malady in Britain, the disease as it is said to occur in other countries, and the symptoms and pathology of the complaint are given, and a case of the affection as seen in Germany has a chapter to itself. The remaining chapters discuss the different stages of sarcosporidiosis, which Dr. M'Gowan considers to be the cause of scrapie. He believes that two varieties of the disease exist, one marked chiefly by itchiness and the other by paralysis.

A period of about two years has been occupied in the investigation of the disease, and the researches have been exhaustive and thorough. The history of the research work, however, seems to be better and more exact than the history given of the disease. We are not convinced that louping ill is the same disease as the one known as scrapie. Louping ill has been the subject of a somewhat close investigation in previous years, notably in 1906, when the Board of Agriculture attributed it to a large, sporulating, rod-shaped bacillus. We also believe that the French *tremblante* and the German *Traberkrankheit* are identical with what has been hitherto known in this country as louping ill and not with scrapie.

The conclusions the author comes to with reference to scrapie are: 1. That the sarcocyst is always present in the skeletal muscles of scrapie sheep. 2. Pruritus, the chief symptom of scrapie, can be reproduced in rabbits by injection into them of sarcosporidial emulsions. 3. Clinical examination of typical cases makes it probable that the paretic symptoms are due to a primary muscle lesion. 4. The marked post-mortem condition of sarcosporidiosis can alone account for the phenomena of the disease. 5. No single view can explain so well the symptoms and general features of the disease as this. Two farms during the investigations furnished cases of Johne's disease in sheep with the usual naked-eye and microscopic appearances.

Dr. M'Gowan's research is very praiseworthy, and it may be gathered from his conclusions that medicinal therapy is useless in the disease. Regeneration of the flock and slaughter of affected animals early are the measures advocated. He considers that ewes can transmit congenital infection to the offspring and that the disease is not contagious. Some other authorities consider it markedly contagious. More research work is necessary in this disease, as indeed it is into other maladies of sheep, such as braxy and louping ill.

Local and Regional Anæsthesia.

With Chapters on Spinal, Epidural, Paravertebral, and Parasacral Analgesia, and on other Applications of Local and Regional Anæsthesia to the Surgery of the Eye, Ear, Nose and Throat, and in Dental Practice. By CARROLL W. ALLEN, M.D. With an introduction by RUDOLPH MATAS. Many illustrations. Philadelphia: W. B. Saunders Company. 1914. Pp. 625. Price 25*s.*

THE work that Professor Matas has done in connexion with local analgesia is so well known that a book such as this, which is practically an extensive exposition of his practice, is sure of a warm welcome from all those interested in the subject. Without any such preliminary call upon favour this book would still deserve a wide circle of readers amongst those who practise local methods of anæsthesia, for it is a comprehensive survey of the whole matter, which is well presented in the text and illustrated by many excellent

diagrams and anatomical plates. Moreover, some of the side issues of anæsthesia are treated in a particularly full and interesting manner. There is, for instance, an excellent chapter on pain and a consideration of the various theories as to its intimate nature, whether it is to be considered as a separate sensation or as always an over-stimulation of ordinary senses. The author does not arrive at any definite conclusion on the point.

A chapter is devoted to anoci-association, and here we note that Dr. Allen does not favour quinine and urea chloride because it "produces massive fibrinous exudates in the infiltrated area with occasional tendency to suppuration." In some respects the book is almost too prodigal of detail, and we think that an unnecessary amount of space is taken up with the details of experimental work in connexion with arterial anæsthesia, a form of anæsthesia having no special claims, and one which, indeed, Dr. Allen does not himself recommend. The author is fond of the combination of alkaloids, generally morphia and scopolamine, both with local analgesias and with spinal analgesia. He gives an interesting account of the attempt to produce general anæsthesia through the intravenous use of local anæsthetics, and shows how enormous doses produce only imperfect analgesia, rendering the process impossible for human surgery.

There have been several large works published recently on local analgesia. Dr. Allen's is certainly not the least large of these, nor is it by any means the least useful. Though it would be all the better for pruning, it is a thoroughly valuable work.

LIBRARY TABLE.

The Way of the Red Cross. By E. CHARLES VIVIAN and J. E. HODDER WILLIAMS. With a preface by Queen ALEXANDRA. Published for the *Times* by Hodder and Stoughton, London, New York, and Toronto. 1915. Pp. 289. Price 2*s.* 6*d.* net.—Our country is fighting not alone for victory, or in defence of her plighted word, or to help to save Europe from the ideals of Bernhardi and from German "world-power," but also for her very existence; and it may be doubted if those who have to sit at home, whether from disabilities of age or other physical infirmities, or because they are needed in some form of work, do realise all that our brethren in arms, British, Belgian, French, Japanese, Russian, or Serbian, are undergoing. In the book now before us are a series of pictures drawn with a vivid and sympathetic pen of men and women, gentle and simple, military and civilian, all "doing their bit" earnestly and heroically because it is their duty so to do. Here we see the admirable organisation at work in the offices in Pall Mall, the doings in a base hospital in France, and can read talks with patients, nurses, and medical officers, which bring home to us the blessings conferred upon the victims of war by the Red Cross Society and the Order of St. John of Jerusalem. The tear and the smile are very near together in such chapters as "The Guardsman," "Soldats Belges," "Washing Up," and many another; but the note of the book is the unwearied patience of everyone concerned, whether in the fighting line, in the hospital, in the packing shed, or in the office. "In one day," said a clerk in the base hospital, "we had 2500 wounded in and sent 700 out to the hospital ship, and it's no use trying to explain the amount of clerical work that involves. But we had to get it done. And we did it." The Red Cross Society, which cheers the broken, helps the wounded and the sick, or, if that be not possible, smooths the way of those who are to die, cannot be carried on without material, however willing the personnel; and material means money. All the profits from the sale of the book are to go to the Red Cross Fund, but more is wanted now and much more will be wanted in the immediate future. If any reader can afford to send a contribution for the work it may be sent to the publishers, Messrs. Hodder and Stoughton, Warwick-square, London, E.C., marked "The Way of the Red Cross," and will be duly acknowledged in the *Times*.

Guida per il Medico in Guerra. By Dr. P. SISTO. Pp. 184. *Guida per il Chirurgo in Guerra.* By Dr. O. UFFREDUZZI. Pp. 197. Turin: Unione Tipografico-editrice. 1915. Price 2.50 lire each.—We are not inclined to think that army surgeons will derive a great amount of help from these little books, for the reason that anyone possessed of sufficient medical and surgical education to obtain commissions in the army will find them deficient in affording information as to the most recent improvements in the methods of dealing with injuries and diseases peculiar to warfare. Dr. Uffreduzzi gives some useful details with diagrams as to the arrangement with reference to the fighting line of field ambulances, and field and base hospitals. About three-fourths of the book deals with the treatment of wounds, both generally and in connexion with special parts of the body, and does not seem to recommend the use of antiseptics except to cleanse the skin around the wound. The following passage would probably not be endorsed by many military surgeons exactly as it stands: "Swabbing the wounds with tincture of iodine is useless and harmful, as is also the use of free ablution with sublimate and carbolic acid now universally abandoned." The author gives no rules as to the principles to be followed in accordance with varying conditions, but it must be allowed that those principles are only slowly evolving. He mentions the use of iodo-benzine to cleanse the skin, but does not allude to the practice of his compatriot, Dr. Guido Cremonese, of Rome, who recommends its free use in swabbing infected wounds. We welcome the advice to give prophylactic doses of antitetanic serum in lacerated wounds soiled with earth and horse excrement, as we believe that the occurrence of comparatively few cases of tetanus with the British army now in France is mainly to be attributed to this practice. A short résumé of the respective duties of the regimental surgeon, the ambulance officer, and the surgeon at the field hospital is, in our opinion, the best and most useful part of the book.

Dr. Sisto's book is a vade-mecum of the practice of military medicine compressed into a small and quite inadequate compass. Turning to a disease which has lately been attracting a great deal of attention among military surgeons, epidemic cerebro-spinal meningitis, we find no mention of retention of urine, which occurs frequently in cases where the cerebral symptoms are comparatively slight; neither under the heading of prophylaxis, which is dismissed in two lines, is there any reference to the supervision and isolation of carriers. We notice that most of the authors quoted for reference have names suggestive of Teutonic origin.

THE LANCET.

LONDON: SATURDAY, MAY 8, 1915.

The Medical Profession and the Needs of the Army.

THE cloud in which the various phases of the war are veiled combines with the far-reaching and complicated nature of the naval and military campaign to make the easy optimism of him who finds that all is always for the best nearly as hard to bear as the outbursts of our GUMMIDGES. Those, however, who resolutely take the broad view that against a powerful enemy there have been persistently opposed obstacles which, if they have as yet not been so obviously effective as had been hoped, have none the less produced in that enemy a dislocation of plan and a failure in great objectives, will know better than to impede the responsible leaders by criticism, made for the sake of criticism, or by useless regrets. But this does not mean that we must always applaud everything that is done, or must abstain from indicating where it appears that a thing might be better done. And we think that in regard to the help that remains to be rendered by the civilian medical profession to the army there is required from the War Office a frank explanation; for there is uncertainty at present. A feeling of doubt exists in the medical profession as to the further and urgent need of medical men with the army. There should be no two opinions in the case. Sir ALFRED KEOGH has most distinctly stated that he requires more men, and we know that the War Office is willing to do all that lies in its power to render any medical help that is offered available for the army, whether that help be general or special, whether it be proffered as whole-time or as part-time engagements. But there is not as yet a very definite plan for using the medical services of any save those who accept commissions unconditionally, and this has not been made obvious to medical men who desire, if possible, to help the military authorities and their country. They have never been told what is, as a matter of fact, the thing which they principally want to know—namely, that they will have to fit into the machine in the first instance, relying later upon showing by their work that the place where they find themselves could be exchanged with advantage to the general cause.

The call on the patriotism of the medical men who are now asked to join the army is indeed very great. The higher posts have been filled and a waiting list has been established behind their present occupants. What is required is medical men to join the army regardless of their civilian position and experience, in subordinate positions and, as a rule, with great sacrifice of income. The War Office cannot offer such men any commensurate return whatever; neither rank nor pay nor facilities for clinical research can often be based upon the special attainments or equipment of any medical man accepting a commission. We feel safe in saying that a man who possesses special qualifications in some direction will in the course of internal administration be, when practicable, placed where he seems to be exceptionally fitted. A skilled operator may be sure that as soon as opportunity serves he will be doing the operating surgery in his district, and a specialist will quickly find his particular services in demand. But at the beginning the War Office finds itself unable to go into individual claims. The principle of half-time employment is recognised, but only as secondary to whole-time service, and the call is really for compliance with the general pattern of medico-military duty. It is to the patriotism of the medical man that appeal is being made, and we are sure that the response will be forthcoming, but we feel that it would come more quickly if the reasons were officially stated why the offers of assistance must be practically unconditional. This war has been from a scientific point of view a triumph for medical men, and they may well feel that they deserve generous treatment. In our forces the freedom from disease has been wonderful, and the official manifestations of pleasure at the medical work done have been both ungrudging and thoroughly well deserved. But this must not blind us to the fact that while medical officers are an integral part of the army their work is dictated by military exigencies. One example which has recently been brought forward in our columns will exactly illustrate what is meant here. A scientific surgeon, on learning that he has to send back many of his patients to other hospitals before he has been able to judge the results of his treatment, and before, in his opinion, the patients are ready to travel, naturally experiences a sense of deep disappointment; but as an officer in the army he knows that the clearing of the beds has been made necessary because other casualties are expected to pour in; these must be received, and the beds are required in which to receive them. This is not a failure of scientific surgery; it is an adaptation of means to ends. The surgeon must not feel that he is being wasted: in certain cases he might do more good, but at the expense of wider profit to the Army. And the army as a whole must remain the chief thing. We doubt if it has been put sufficiently clearly to the doctors who have made applications to the War Office without success that they, urgently as their services are required, cannot be placed in the billets where they would be most useful individually, but may have to fill berths which they think unsuitable and where the duties may not appear nearly so important as the civilian

ones, which, at heavy cost to themselves, they have resigned, so as to help in the general welfare of the army.

We have before us many letters from medical men very anxious to help in the national stress, who have been kept from volunteering because they have felt that their particular services were not in request. They do not seem ever to have been told that their particular services are not sought, but their general help. They have never been urged to join the army as a patriotic action. When a general practitioner of any standing unconditionally leaves his practice and accepts a lieutenant's commission he gives up so much that he has a right to expect that the measure of his sacrifice should be recognised by the country. The doctor who joins the army occupies a special position. He is a citizen whose actual professional civilian work is useful with the fighting forces; he is a layman whose equipment is necessary for military purposes. It is not a question of asking a doctor to give up being a doctor to become a soldier; during war, as a doctor he is a soldier. When the barrister or the stockbroker joins the army it must be very seldom that his experience in law court or counting house serves him as a fighting man. His action is as patriotic as that of the practitioner who joins the Royal Army Medical Corps, but the latter costs little or nothing to train, and this should be recognised. There is no doubt that more doctors are and will be wanted for the army—signs of local plethora mean nothing. And we believe that the army will obtain the number of medical men needed, however great that number may be, and however dangerously depleted the ranks of civilian medicine may thus become. But we would urge upon the authorities that the case of many of those who will be taking commissions calls for generous appreciation of their self-sacrifice and a clear explanation of the demands made upon them.

The Registrar-General's Report for 1913.

THE seventy-sixth annual report of the Registrar-General has recently been presented to Parliament. The document relates to the births, deaths, and marriages in England and Wales during 1913, and as it has only been available to the public within the last few days our readers will not unreasonably look for some explanation of its late appearance. In a prefatory note Mr. BERNARD MALLET expresses his regret that this report, relating as it does to 1913, should not appear until the spring of 1915, as he fully recognises the importance of prompt publication of the data in question, considered as a permanent record of vital statistics. Having regard to the delay in the issue of the two preceding reports—caused partly by the requirements of the Census and partly by the extensive changes of form and matter inaugurated in the report for 1911 — the Registrar-General hoped until recently that, the disappearance of these two causes of delay having been achieved, a much earlier publication of the present report would have been secured—not later than 12 months after the completion of the year to which it refers. The realisation of this hope has, however, been prevented by the war, which has had the combined effect of reducing the expert staff of workers in the department, and of imposing new duties on the remainder. We are assured, however, that unless the interference due to war is further increased a definite improvement may be expected in the date at which the report for 1914 will be available to the public.

In view of the special circumstances of the time the advisability of curtailing the present report was considered; but this course was, as we think wisely, rejected, because of the consideration that the value of a series of annual tables would be seriously impaired by any interruption of its continuity. Consequently, all the important tables in the last two reports have been repeated in the present. The Registrar-General expresses the opinion that while tables of primary importance ought to appear annually, and in as constant a form as circumstances permit, it will be advantageous to vary from time to time both the subject matter and the manner of treatment of other portions of the report. Whilst, therefore, matters of prime importance will henceforth be given every year, the records of other matters of less, though still considerable interest will be published for "sample years" at intervals, the subjects so dealt with being varied from year to year in order to increase their number. This is a departure which will much enhance the value of these reports. Speaking generally, the vital statistics of the year 1913 are distinctly favourable. It is satisfactory to note that both in 1912 and in 1913 the marriage-rate showed a further increase on the rate in the preceding four years, the provisional figures for 1914 indicating a still further rise. The birth-rate, however, failed to show any recovery. The death-rate in 1913, although somewhat higher than in 1910 and 1912, was otherwise the lowest on record. Apart from the effects of the warmer summer, the reduction of mortality below all previous records which characterised 1912 was maintained throughout the year now under review.

As 1913 was the last complete year preceding the outbreak of hostilities, the statistics in this report concerning the British army and navy will be studied with interest, if only as affording a basis of comparison with the less favourable figures which must be looked for in subsequent reports giving the results of the existing European War. Highly significant in this connexion is the fact that the average regimental strength of the British army was actually lower in the year under notice than it had been at any time since 1899. The health of the army, both in the United Kingdom and abroad, appears to have been maintained at a high standard. Particulars concerning

the Royal Navy do not readily admit of comparison with those of the sister service. Nevertheless, the health of the service afloat is shown to have been satisfactory for several years past. Equally interesting for purposes of future comparison are the details of casualties in the British merchant service, especially those resulting from the destruction of vessels which may be expected to recur in the event of the continuance of the present conflict. From particulars furnished by the Marine Department of the Board of Trade it appears that in the year 1913 masters and seamen employed in the merchant service were more numerous than at any previously recorded period, whilst the mortality from disease, wreckage, and other casualties compares favourably with that of previous years. In this case especially the records of future years will enable some measure to be derived of the serious loss of life now being wantonly inflicted on our non-combatant sailors by the piratical conduct of the enemy.

Annotations.

"Ne quid nimis."

EFFECT OF THE SPIRIT TAX ON THE COST OF MEDICINAL COMPOUNDS.

ONE of the unintended consequences of the spirit duty has always been to impose a heavy burden of taxation on a large and important class of medicinal compounds, for alcohol is more extensively employed in the manufacture of galenical preparations than any other substance. A very high proportion of a hospital drug bill is in respect of the duty on spirit, and the same, of course, applies to a pharmacist's account with his wholesale house. This was the case under the rate of duty in force before the increased duties were proposed on spirit last week, and it is therefore obvious that the tax on spirituous medicines will be double the previous tax unless some concession is made in the case of medicinal spirits. Under the old duty a hospital using a hundred gallons of rectified spirit a year paid something like £115 in respect of the duty on alcohol, while at the new rate the duty would, of course, be £230. Some of the large London hospitals use 200 gallons of rectified spirit a year, and in exceptional cases more than this amount, so that the tax is a very serious matter indeed. In introducing his proposals in the House of Commons on April 29th the Chancellor of the Exchequer intimated that he was anxious to exempt medicinal spirits from the increased tax, and that he was endeavouring to devise a means of making an exception in the case of such spirits. In the past Mr. Lloyd George, as well as his predecessors, when urged to differentiate between potable spirits and alcohol used in the manufacture of tinctures and like preparations, has refused to do so on the ground that it has been impossible to formulate a practicable scheme to prevent fraud; but with a tax of 29*s.* 6*d.* a gallon on proof spirit and 46*s.* a gallon on rectified spirit it is urgently desirable that the Excise authorities should exercise all their ingenuity in devising a plan by the operation of which medicinal spirit may be freed from the extraordinarily heavy burden of taxation without loss of revenue by the fraudulent use of spirit. The case for a rebate of the duty on medicinal alcohol is equally strong from the point of view of the Insurance Act Drug Fund as from that of the hospitals. The problem is admittedly a very difficult one, but there is some hope that a satisfactory solution will be found.

TREATMENT OF TUBERCULOSIS.

THE Local Government Board have issued two circulars in reference to the arrangements to be made for the treatment of tuberculosis. One is addressed to the metropolitan borough councils and the other to the councils of counties and county boroughs (England). Their contents are similar. In reference to tuberculosis officers, the Board refer to the fact that some tuberculosis officers are absent on naval or military duty, and that their absence should be duly reported. Further, the councils are reminded that at the present moment it may be difficult in all cases to secure that tuberculosis officers should have the additional qualifications which were recommended. It is only right that relaxation of certain rules should be permitted at the present time, when the needs of the nation call for all medical men that can be spared; indeed, it might well be upheld that the younger officers should be encouraged to obtain temporary commissions in the Royal Army Medical Corps, their appointments being held open for them and their duties in the meantime being carried out by older practitioners. The Board also point out that they have had under consideration the question of the provision by local authorities of nursing for persons suffering from tuberculosis who are being treated in their own homes. The Board rightly recognise that the provision of skilled nursing for some of these cases forms an essential part of the treatment, and we trust that in the future suitable arrangements will be made; but it is pointed out that the need of nurses for military purposes will for the time being preclude any extension of the nursing service in this direction. Another important matter referred to is the organisation of voluntary committees for the care of patients suffering from tuberculosis. The Departmental Committee on Tuberculosis expressed the opinion that the effectiveness of the dispensary could be greatly increased by the formation of such committees consisting of representatives from the local authorities, boards of guardians, Insurance Committees, and from all charitable and social work organisations in the district. The assistance such committees could give would be great, such as the provision of additional food, change of air, clothing, suitable occupation, and so on. The circular points out that much of the work to be so undertaken would be outside the powers of local authorities, and the committees would have to rely largely on voluntary contributions. But with careful organisation the help thus afforded would be great. The experience of sanatorium officials goes to show that the ultimate result of the treatment at such institutions largely depends upon whether the patients can be placed in healthy environment and find suitable occupation after their discharge. In a large number of cases this is most difficult of accomplishment, and consequently many relapses occur. We cordially support the recommendation of the Board that such committees should be formed with as much support as possible from the borough and county councils.

FROM GERMAN MEDICAL JOURNALS.

RECENT numbers of the *Presse Médicale* have contained interesting excerpts from current German medical journals which deserve to be brought to the notice of the medical profession in England. In one of the January numbers of the *Deutsche Medizinische Wochenschrift* Dr. Loewenfeld, of Munich, a neurologist, published an article on the national character of the French and on its psychopathic traits as evidenced in the present war. He declares that the specific psychological characteristics of the French are vanity, ostentation, carelessness for truth, exaggerated emotivity, and an innate tendency to cruelty, as seen, for instance, at the time of the Terror and the Commune, and as exemplified by "the brutalities of which the Germans and Austrians have been the victims since the present war began." The delicate comments of the French editor on this profound analysis of the racial character of his people can be imagined. It is not necessary, unfortunately, to go back to the days of Tilly or Wallenstein to find proofs of German cruelty; the hecatombs of Belgium do not date back to the Terror, or even to the Commune. Yet to read the puerile communication of the German neurologist one might suppose that the deliberate and methodical application of a system of terrorisation, on a colossal scale, as an integral part of the German conception of war, advocated in all frankness by its exponents, had never even been devised, still less carried into effect. In a February number of the same journal Dr. Erich Hesse, attached as "Hygieniker" to the 19th Army Corps, explains the excellent general condition of the troops under his own more immediate observation as due in great part to their supplies of French red wine. A solemn explanation of how these immense stores came into their hands—"the inhabitants had fled owing to fear of well-merited punishment"—is followed by an equally serious appreciation of the great self-restraint of his soldiers in so rarely "exceeding the bounds of decency." Their good health, their resistance to the petty hygienic troubles of the trenches, the favourable evolution of intestinal catarrhs, &c., are all attributed to the same cause. "Ah! le bon vin rouge de France!" says the French editor by way of comment. There have been many articles dealing with venereal disease in the German medical journals. In the *Deutsche Medizinische Wochenschrift* of Jan. 14th Professor Neisser, of Breslau, says that the figures of 70·6 per 1000 cases treated in hospitals during the Franco-German war of 1870, as representing the proportion of venereal cases, have already been largely exceeded in the present war. After remarking that an appeal to the honour of the heroes of Louvain and Flanders would be sure to have a deterrent effect (Man könnte aber gewiss mit Grösserem Erfolg an das Ehrgefühl unserer Truppen appellieren), he nevertheless makes the following proposals to deal with the situation: (1) imprisonment of all prostitutes that can be discovered; (2) energetic prophylactic treatment with salvarsan and mercury of all women "suspected" (*sic*) of prostitution; (3) the distribution of suitable protective appliances to the armies of occupation. Anyone conversant with French journalistic levities can imagine for himself the chance thus afforded for an expression of caustic humour. Neisser's proposals have been followed by numerous criticisms and counter-suggestions in the columns of the same journal. Dr. Kurt Mendel (of the *Neurologisches Centralblatt*) can find no remedy for the extremely widespread infection but absolute continence. Others make proposals for the regulation of this traffic which are on a par with their methodical and well-organised arrangements for the distribution of bread tickets. At a "Kriegsärztlicher Abend" held at Lille on Jan. 20th (*Münchener Medizinische Wochenschrift*, Feb. 9th), and attended by some 200 military medical men, it was proposed to distribute appliances to the troops by means of automatic machines. Complaints were also made of the behaviour of the women in the Germans' hands; and here a passage, in its nauseating frankness, may be given in the original: "Selbst die bessere französische Prostituierte halt sich den Deutschen fern: es kommen fast nur die niedersten und schmutzigsten Prostituierten in Betracht, die man sich denken kann. Sie sind eine gefährliche Infectionsquelle, weil sie alle Reinlichkeitmassnahmen, die die bessere Prostituierte durchfürt, missachten. *Daneben gibt es Frauen, selbst mit 4 und 5 Kindern und Mädchen, die sich aus reiner Not, um ein halbes Stück Brot den Soldaten anbieten.* Diese Neulinge der Prostitution sind besonders gefährlich, weil sie die Hauptträger der Infectionsquelle werden." As the French editor truly says, what human being can read without horror and disgust the unconscious revelation of a world of infamy contained in these lines?

THE ETIOLOGY OF RICKETS.

IT is somewhat remarkable that in a disease so widely spread and so common as rickets there should still remain so much that is enigmatic, or, at any rate, controversial in its etiology, in spite of careful clinical and experimental research in this and other countries. The whole subject of the etiology of this condition is reviewed in an interesting and critical manner in a paper by Dr. Leonard Findlay, which we publish in this week's issue of THE LANCET. He points out that in this country and in America, following the interesting observations of Sir John Bland-Sutton at the Zoological Society's Gardens some years ago, the dietetic factor in the etiology has received a great deal of attention. It is natural, since this disease can apparently be induced in some animals under experimental conditions, that considerable importance should attach to such observations; but Dr. Findlay rightly points out that it is essential that the truly rachitic character of the lesions induced in animals should be established by microscopical examination. Moreover, he points out further that there is a metabolic disturbance in rickets in the human subject, notably in regard to calcium salts, an important fact which is often lost sight of. It would appear that there is an inability on the part of the body to use this substance, even though present in the diet in sufficient amounts. The theory that this depends upon some hormonic defect is a tempting one, but is not at present definitely established. It has long been recognised that there is probably a hygienic factor in the causation of rickets, since the disease is so much more common in towns and in the older countries than in the country and in newer settlements. Dr. Findlay, on the basis of some experimental observations previously published, arrived at the startling and heterodox conclusion that there was no evidence that deficiency of fat, or, indeed, any

error of diet, was a factor in the etiology of rickets. He found that the important factor in animals was the deprivation of exercise. He now supplements his observations in this respect by an interesting examination of the dietetic and hygienic conditions of between 400 and 500 rachitic children. He shows charts demonstrating that neither the want of breast-milk nor prolonged suckling exerts any definite influence on the incidence of rickets among the cases examined—an interesting refutation of the suggestion that dietetic factors are of paramount importance or that artificial or patent foods are causal agents. Some observations upon the occurrence of intestinal disturbances prior to the onset of the disease do not appear to lend support to Marfan's view that an intestinal auto-intoxication is the cause of the condition. An analysis of the cases according to the level of their homes above the ground revealed no important fact. A study of the amount of air-space allowed in the home to each child demonstrates that the less air-space the greater the incidence of the disease. Lastly, the amount of time spent in the open air is studied in regard to these children and reveals the interesting fact that a considerable proportion of these children are not taken out at all. Dr. Findlay believes that the two factors, confinement and deficient fresh air, render the child lethargic and diminish the amount of muscular exercise obtained, and further suggests that deficient exercise affects the metabolism of calcium, a thesis for which there is some experimental support. On the basis of his observations he advises massage, passive movement, and electricity in the treatment of the disease. We commend his paper to our readers as a thoughtful and suggestive piece of work.

THE PATHOLOGY OF LEPROSY.

THOUGH many points in the pathology of leprosy remain unsolved, it cannot be denied that the experimental investigations carried out during the last few years have thrown considerable light upon this difficult subject. In the current number of the *Annals of Tropical Medicine and Parasitology*, Vol. IX., No. 1, a very interesting and timely summary of the present state of our knowledge of leprosy, and the results obtained concerning it by experimental studies, has been contributed by Dr. H. Bayon, research bacteriologist to the Government of the Union of South Africa. The author has discussed the whole question of the clinical and pathological features of the disease, its specific organism, the experimental transmission of the infection to animals, and the relation of spontaneous rat-leprosy to the human disease. He has also dealt with serological tests and reactions in leprosy, and the degree of communicability of the infection. He has something also to say concerning the treatment and prophylaxis of the malady. It is gratifying to find that Dr. Bayon views hopefully the prospect of the ultimate extinction in time of this terrible disease. As regards its communicability, he believes that the evidence which has been accumulated justifies the conclusion that the usual mode of infection is by direct or indirect contact, especially under unfavourable hygienic circumstances, including overcrowding and lack of personal and domestic cleanliness. Intimate contact, such as that between mother and child, or sleeping in the same bed with a leprous person, supplies the requisite conditions for the transference of the disease. In countries like South Africa, where leprosy is not uncommon and where native servants or nurses are employed to wait upon white children, the danger is greater than some authorities have been inclined to admit. It is pointed out that the disease may exist in a native servant for a long time before its presence is recognised by the employer. Instances are mentioned where infection is believed to have followed upon the common use of drinking-cups or other vessels. Although Dr. Bayon regards as "far-fetched" the suggestion that a biting insect may act as the intermediary in the transmission of leprosy, he nevertheless admits the possibility that the common house-fly may suck up germs of the disease from leprous sores and transfer them mechanically to a healthy human subject. In this connexion those who have travelled in the East cannot fail to have been struck with the frequency with which flies swarm upon the open sores and round the nostrils of leprous beggars. With respect to spontaneous rat-leprosy, it presents numerous points of resemblance to the human malady, and the experiments which have already been made suggest that it may be etiologically related to that form of the disease from which man suffers, the relationship being possibly of a similar kind to that which exists between bovine and human tuberculosis. As regards treatment, Dr. Bayon reminds his readers that the macular variety of leprosy is subject to spontaneous remissions and apparent cures without the aid of any remedies. Chaulmoogra oil seems to be indicated for the nodular form of the disease, and as far as present experience goes, cultural extract may be usefully employed for the macular cases. With respect to prophylaxis, the measures recommended include registration and sanitary inspection of the homes of lepers, but segregation of the sufferers in asylums, settlements, or colonies is strongly urged; early separation of children from their leprous parents is necessary, and the strict enforcement of personal and domestic cleanliness, along with the abolition of overcrowding, must be carried out in localities where leprosy is known to be endemic.

INVALID CHILDREN'S AID ASSOCIATION.

THE Invalid Children's Aid Association held its twenty-seventh annual meeting on April 28th, Field-Marshal Lord Grenfell presiding. Three resolutions were submitted to the audience. The first, proposed by the chairman, was in favour of the approval and adoption of the annual report, and as Lord Grenfell pointed out, this report showed the excellence of the work done by the association, and the steady spread of its activity. The association now has 20 branches at work in London, and nearly 40 more provincial branches, most of them federated to the London Association. As evidence of the activity of the London branches, Lord Grenfell quoted the fact that in 1914 over 8000 invalid children were assisted by convalescence, surgical instruments, or whatever particular form of medical or surgical aid their medical attendants had ordered; while the sum of over £15,500 was expended in giving this aid. A second resolution, pledging financial support to the association, was proposed by Countess Ferrers, who spoke eloquently of the assistance so freely given by the association. A third resolution recommending the re-election of

the association's council and executive committee was proposed by Lady Jellicoe, who instanced the number of former Invalid Children's Aid Association "cases" now serving their country at the front or on the waves as conclusive evidence of the excellent work it does. It had been hoped that Captain Francis Grenfell, V.C., would have been able to be present at the meeting and to speak. This was impossible, as he was actually serving at the front; but his letter expressing his regret at being unable to be present, written from the trenches near Ypres, was read out, and made a most moving appeal to its hearers. Year by year the work of the association increases, and year by year the difficulty of collecting the funds grows; but the association is favourably known to so many medical men that the public ought to feel sure that the money given does good medical service.

ASPERGILLOSIS OF THE NASAL ACCESSORY SINUSES.

Mr. Herbert Tilley has published in the *Journal of Laryngology, Rhinology, and Otology* for April five cases of aspergillosis of the maxillary antrum. The rarity of the condition is intimated from the fact that there can be found no mention of it in the literature of rhinology; it is suggested, however, that this condition may have been overlooked. Myxomatous disease is most likely to be confused with it. The mode of infection with the aspergillus mycelium is not known; it may be grafted upon a chronic inflammatory infection of the antral mucous membrane. Marked nasal obstruction is a prominent feature, and this is associated with sneezing and the discharge of a mucoid or slightly muco-purulent fluid. There may be neuralgic pains in the cheek and face. Especially important for diagnostic purposes is the occasional expulsion of small masses of a whitish-grey, semi-translucent, viscous material. In no instance is the discharge so free as to suggest an ordinary, chronic empyema. On examination the most striking feature in the cases seen was the pale, swollen, and œdematous condition of the nasal mucous membrane; and, further, this was not overcome by the application of 20 per cent. solution of cocaine. In no other disease, says the writer, is the lack of response to cocaine so marked. Transillumination revealed opacity in both infra-orbital regions. It was impossible, also, to get any return of fluid on irrigation. These points are all suggestive of this condition and diagnosis is assured, of course, with the discovery of the mycelium. This, however, is often a matter of some difficulty. In the instances here recorded Professor S. G. Shattock had undertaken the examination. In the mucin examined there pervades a well-developed mycelium, the coarseness of whose filaments at once excludes actinomycosis. There are, of course, also collections of bacteria which are, however, much less widely distributed than would be expected. The mucin is probably secreted under irritation and is subsequently inspissated and the contained cells are polymorphonuclear leucocytes. It is curious to note, finally, the presence of crystals resembling the Charcot-Leyden crystals found in asthmatic sputum.

WE regret to announce the death of Sir William Richard Gowers, M.D. Lond., F.R.C.P. Lond., LL.D., F.R.S., which took place on May 4th at his residence, 34, Ladbroke-square, W.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

ANNUAL CONGRESS.

(*Concluded from p. 930.*)

AT the annual congress of the Ophthalmological Society of the United Kingdom two set discussions were arranged. The first, upon Ophthalmic Injuries in Warfare, introduced by Mr. W. H. H. Jessop, was reported last week. The second, on Detachment of the Retina, was introduced by Mr. M. S. Mayou.

Detachment of the Retina.

Mr. MAYOU, in introducing the set discussion on this subject, said that detachment of the retina was only a sequel to other intraocular diseases. He dealt in the first place with its associated physical phenomena, and secondly with congenital detachment especially. The condition was really one of separation of the retina between the pigment-cell layer and the rods and cones—i.e., where the two layers of the optic cup come together during fœtal life, and which was subsequently represented as a lymph space. Detachment of retina was essentially a cystic condition. He was strongly in agreement with von Graefe's view that it was exudative in origin, and that detachment could not occur without fluid being effused from the choroidal vessels, the fluid having a higher specific gravity than that in the vitreous chamber. It was probable that there was no true tissue adhesion between the rods and cones and pigment-cell layer, or at least so slight that it was not a factor in keeping the retina in its place. This potential space was filled with lymph, permitting the rapid tissue change associated with the bleaching and regeneration of the visual purple. In the normal eye distension of the vitreous in its hyaloid was by fluid derived from the ciliary process; the vitreous exerted a pressure by having a higher density than the lymph in the inter-retinal space. In many diseases the vitreous became more fluid than normal, or the framework of the vitreous shrank with the hyaloid, and there was free fluid in the space between hyaloid and retina. With degeneration of the vitreous the densities of the fluids on the two sides of the membrane closely approximated, and a slightly increased density of that in the inter-retinal space would produce detachment. For the investigation of such cases it was necessary to use a fixing agent which coagulated but did not destroy albumin, and boiling was the best. It was very difficult to ascertain the underlying cause of shrinkage of vitreous. Detachment of retina occurred when a larger pressure was exerted outside than inside the membrane. Detachment could occur with a normal vitreous, as when the choroid was the seat of a growth. Owing to the effusion of albuminous fluid the retina was pushed inwards, and some of the fluid was squeezed out of the connective tissue meshes, passing forward into the anterior chamber. Glaucoma might supervene before the complete shrinkage of the vitreous. Detached retina associated with growth in the choroid was exudative in character, though it might cause secondary changes in the vitreous. He detailed some cases in children who had come under his care. In myopia a fluid exuded into the inter-retinal space of low density would cause detachment, possibly associated with venous obstruction. Inflammatory exudation from the choroid might cause detachment if of serous rather than plastic nature. Injuries might cause detachment, either with or without perforation of the globe. Fibrous bands in the vitreous, he thought, rarely caused detachment by contraction, though they might predispose to it by causing shrinkage and fluidity of vitreous. Cysts in the retina in its normal position might be of considerable size and, by bulging, cause detachment on either side. Some of the cures of detachment, he thought, were probably due to evacuation of the fluid contents of these cysts. Congenital detachment was not usually recognised, as it occurred in microphthalmic eyes, and was not then seen clinically. Summarised, his contention was that the essential feature in congenital separation between the layers of the retina was distension of the primary optic vesicle with fluid, and that the fibrosis of the vitreous was of secondary development, not the cause of failure of union between the inner and outer layer.

Mr. LESLIE PATON pointed out that so long as the pathology of any disease was obscure its treatment must be empirical and frequently ineffectual. This was the present-day attitude in regard to detachment of retina, which was really a terminal effect. In cases of tumour of choroid detachment was caused by accumulation of œdematous fluid behind the retina, this fluid being an irritative product. In some cases the cause was a perforating wound of the sclera, a case of which he quoted. Sometimes the detachment was due to a rapid exudation of lymph and serum into the subretinal space in severe choroiditis or general uveitis; or it might be caused by subretinal hæmorrhage. He believed that detachment might occur from cicatricial contraction of the retina itself. From an examination of different types he thought it safe to conclude that symptomatic detachment might arise from either a push from behind, a pull from inside, contraction of the retina, or a combination of any of these factors. He reminded the meeting of the main contentions of Raehlmann and Leber, and said that most cases of simple detachment occurred in myopes; he had found it to occur in all degrees of myopia, in which condition there was an increased cubical capacity of the scleral cavity. Vail, of Cincinnati, had shown that in myopes the circular ciliary muscle was usually atrophied from non-use, and that authority considered it part of a generalised atrophy of the ciliary body, with diminution of aqueous secretion and lowering of ocular tension. Mr. Paton then proceeded to discuss the question of sympathetic detachment, stating that he considered it a moot point as to whether it was really sympathetic, or whether the action was a setting up of a chronic cyclitis or uveitis in the sympathising eye. He had had some cases of cure—i.e., restoration of function; and he realised that spontaneous cure sometimes eventuated, though similar cases left alone had not got well, as had the cases in point after his treatment. In every case he thought all the facts should be placed before the patient, so that he could decide on whether he would have anything done or not, especially as knowledge on the subject was not yet complete enough to enable a safe prognostication to be made in any particular instance.

Dr. A. MAITLAND RAMSAY, reviewed the literary landmarks. He agreed with Mr. Paton that no theory of causation of detachment sufficed to account for all the cases; the underlying cause in all was disease of the uveal tract and of the pigment epithelium, though this might be nothing more than senile degeneration. The presence of a collection of fluid between the choroid and retina led to many forms of evacuation, which were briefly indicated—38 in number. The most important factor in the treatment he considered to be absolute rest in bed; patients often volunteered the statement that they could see best in the morning after a good night's rest, but that sight failed as the day advanced. The rest period should not be less than four to six weeks. Relapses occurred most frequently in those who had rested but a short time. Every effort should also be made to improve the patient's well-being, particular attention being bestowed on procuring regular action of the bowels, kidneys, and skin. Next the pressure bandage was important; both eyes should be covered and the pressure must be quite appreciable, though stopping short of pain. But where the bandage caused pain, and on its removal the eye was red and irritable, it should be discontinued, owing to the possibility of irido-cyclitis supervening. Cases which did not bear the pressure bandage he regarded as of unfavourable prognosis. The third important factor of treatment was subconjunctival injections after 48 hours of bandaging, but only if the electric ophthalmoscope showed that the site and character of the detachment appeared favourable. The pain following the injections (which he detailed) was mitigated greatly by using chemically pure chloride of sodium. Diaphoresis he did not employ until a fortnight's trial by his other methods showed little or no improvement. In some cases diaphoresis started an improvement which became slowly progressive. He used pilocarpine for this. There should be a period of leisurely recuperation afterwards; resumption of businesss immediately after cure seemed to invite relapse, and this was also helped by constipation. Failure was almost certain when the choroid was extensively diseased, when the pupils were sluggish in responding to mydriatics, and when intraocular tension was greatly reduced.

The debate was continued by Sir ANDERSON CRITCHETT, Mr. E. TREACHER COLLINS, Mr. R. R. CRUISE, Mr. J. B. LAWFORD, Mr. SYDNEY STEPHENSON, Mr. D. LEIGHTON DAVIES, Mr. P. W. MAXWELL, Mr. J. B. STORY (Dublin), Mr. C. HIGGENS, Mr. G. MACKAY (Edinburgh), and the PRESIDENT and the authors replied.

Mr. CYRIL WALKER read a communication on

Angiosarcoma of Retina.

The patient, aged 4 years, was seen on Nov. 11th, 1914. Eight months before there was said to have been a film over the right eye; no pain or redness. It disappeared in about six weeks. In June and September there was some pain in the eye, but the boy had regularly attended school to the end of October. The right eye was seen to be the seat of a brownish-yellow hypopyon. There was no ophthalmoscopic reflex; the tension was normal, and the pupil dilated well with atropine. There was doubtful perception of light. The left eye was normal, and the patient's general condition good. Ten days later the eye became red and tender and there was some continuous pain; the tension was *plus* 1. The contents of the anterior chamber were evacuated, and Professor Walker Hall reported that the material was probably sarcomatous. The eye was accordingly excised and submitted to the same authority. Early in December some three-quarter inch of the stump of the optic nerve was removed, with a mass of tissues surrounding it. Pathological examination showed that recurrence had commenced in the stump of the nerve and the surrounding tissues, but there was a small margin of healthy tissue. Mr. A. Osborne, of Ilfracombe, reported that recurrence took place within a fortnight of the second operation, and that the mass had attained the size of a cocoanut. The boy's mental condition was not affected, and there had been no metastasis. The specimen showed that the ciliary region was not invaded.

Clinical Meeting.

At the clinical meeting at the Royal London Ophthalmic Hospital the following cases were shown:—

Mr. J. GRAY CLEGG (Manchester): Case of Bullous Keratitis, whose sister was similarly affected.

Mr. SYDNEY STEPHENSON: (1) A case and drawing to illustrate Coarse Striate Clearing of a Corneal Cicatrix; and (2) a case of Blue Sclerotics.

Mr. C. WRAY: (1) Cases operated on for Conical Cornea; (2) drawings of Cured Conus; and (3) Exostosis of the Orbit (two cases).

Mr. E. TREACHER COLLINS: (1) Case of Congenital Ectropion of both Lower Lids; (2) Double Facial Paralysis; (3) Detached Retina cured by rest in bed and scleral puncture; and (4) Aphakia with apparent accommodation.

Mr. LESLIE PATON: Cases of Healed Detachment of Retina.

Mr. W. T. HOLMES SPICER: Congenital Cataract and Spontaneous Dislocation of Lens in three members of the same family.

Mr. J. ATTLEE: Peripapular Ectasia.

Mr. RAYNER BATTEN: Collapsible Periscope.

Mr. W. H. H. JESSOP: Acute Central Retinitis.

Mr. G. H. POOLEY (Sheffield): Extensive Pigmented Moles of Face, Eyelids, and Conjunctiva.

Mr. R. FOSTER MOORE: (1) Two instances of Disappearance of a Detachment of the Retina in Patients with Albuminuria; and (2) Pigmented Mole of rapid growth.

Mr. CYRIL H. WALKER (Bristol): Hyaline Bodies at the Optic Disc.

Mr. A. C. HUDSON: Iridescent Corneal Scar.

The PRESIDENT (Mr. F. RICHARDSON CROSS) read a paper on

Eye Symptoms in Kaposi's Disease (Xeroderma Pigmentosum).

In a general review of the disease he stated that spots like freckles appeared in the first year or two of life, and were often precursors of the grave skin disease described by Kaposi in 1870, accompanied by dryness and atrophy of the skin, and other serious changes. Frequently more than one member of a family were affected. The prognosis was very gloomy; early death might occur from deep ulceration towards the brain or other vital parts; or from exhaustion or hæmorrhage. The muco-cutaneous surfaces, such as the

eyelids, became thinned, shrunken, and fissured with superficial ulcers; and the eyeball might participate in any phase of the disease, and warts might occur on the lid edges. The ocular conjunctiva was usually hyperæmic. Some cases showed pterygium, and the cornea became hazy from infiltration of its substance or from swelling of the epithelium. Ectropion was frequently present, leading to opacity or ulcer of cornea. But in many cases the eyes were open and light was well tolerated. The optic nerve and intraocular structures were affected only late, if at all. Massage of the eyeball, especially by the use of calomel ointment, served to empty the superficial blood-vessels. Dr. A. Whitfield had much improved one such case by applying X rays. During the past year Mr. Cross had had under observation two cases of Kaposi's disease, brother and sister, aged 11 and 9½ years. The parents (cousins) were healthy. The boy was born in Ceylon, and when coming to England at nine months old he became very sunburnt in the Red Sea, his skin becoming scarlet. Later the face, neck, and shoulders were dotted with yellowish-brown pigment spots, and the skin became thin and shrunken. The girl was born in England and arrived at Ceylon when a few months old; in her voyage she did not encounter excessive sun-glare. At nine months of age her skin also became bad, and a little later a small nodule appeared on the cheek but fell off, leaving no scar. She had implication of the eyelids, causing eversion. When four years old the boy had a troublesome papule on the eye, for which he was treated by Sir John Tweedy, who reported that he first saw the patient in April, 1907, when he was under the care of the late Dr. Radcliffe Crocker for the skin condition. At that date there was subconjunctival ecchymosis at the outer side, and at the inner side of the globe, between the cornea and the caruncle, a truncated conical swelling with some ecchymosis and conjunctivitis. There was so much photophobia that a satisfactory view could not be obtained. On the following day, under a general anæsthetic, he examined the eye and found an indolent swelling in the conjunctiva and episclera at the inner side of the globe. He scraped it with a sharp spoon and applied powdered salicylic acid, and ordered the eye to be washed two or three times a day with a solution of salicylate of soda. The eye gradually improved until the seat of the swelling presented the appearance of a small phlycten. Eighteen months later, when Sir John Tweedy next saw the case, the eyes were much stronger and were rarely inflamed. Two and a quarter years later the patient saw J. 2 with correcting glasses. When Mr. Cross saw the boy 12 months ago he had much photophobia, both winter and summer, and when in the light he was constantly sneezing. He found it difficult to read. Under chloroform there was found to be a dull hyperæmia of the eyeballs and two small phlyctenular swellings. The corneæ were somewhat glassy; the pupils were small, but reacted to light and opened freely to homatropine. A few days later he saw 6/18 for a moment and J. 6. Improvement was reported after massage of the eye with calomel ointment. In November there was acute inflammation of the right eye and a fine infiltration running across the cornea. There was also a haziness of the left cornea, and a marginal spot looking like pterygium.

Mr. R. AFFLECK GREEVES showed microphotographs of sections through the conjunctival growth removed from the eye of the boy. The growth consisted almost entirely of epithelial cells, mainly prickle cells, and showed evidence of commencing malignancy.

Mr. AFFLECK GREEVES read a paper on

The Microscopical Anatomy of Syphilis of the Eye,

illustrated by microphotographs of sections taken from three cases. In the first case, one of old interstitial keratitis, he pointed to the presence of persistent though empty endothelial channels in the cornea, the remains of former blood-vessels. The second case was one of gumma of the iris, the structure of which was peculiar in that the pigment epithelium had proliferated into the inflammatory tumour and given clinically a pigmented appearance, causing to be made the erroneous diagnosis of melanosarcoma. The third case illustrated the pathological appearances of syphilitic scleritis and of a proliferative form of choroido-retinitis characterised by the presence of dense tissue between choroid and retina. This tissue, he considered, was probably produced by the proliferation of the retinal pigment epithelium.

Mr. GREEVES also read a paper by Mr. G. KOMOTO on

The Pathological Anatomy of the Retina and Choroid after the Complete and Partial Cutting-off of their Respective Blood-supplies.

It was based upon the pathological examination of an eye which was excised ten days subsequent to the cutting-off of the retinal and posterior choroidal blood-supplies by the removal of a lymphangioma from the posterior part of the orbit, along with a portion of the optic nerve. While the retina was completely necrotic posteriorly, all its layers were well preserved anteriorly. It was argued from this that the whole of the anterior part of the retina is probably almost entirely dependent on the choroidal circulation. The chromatophores of the choroid and the pigment epithelium of the retina showed peculiar changes in form, caused by their being deprived of normal blood-supply. The paper was illustrated by microphotographs.

Mr. TREACHER COLLINS read a communication on

Apparent Accommodation with Aphakia.

The case was described of a boy who had lamellar cataracts removed from his eyes when 7 years old by repeated discission operations. When he was 14 it was discovered that he was using only one pair of glasses for both distance and reading. On testing his sight it was found that he saw right with + 13, 6/6; left with + 13, 6/9; and with the same glasses in the same position on his nose, looking straight through the centre of them, he read J. 1 fluently. Any alteration in curvature of the cornea while he adapted his eye for the near point was excluded by examination with the ophthalmometer, and by the use of Batten's eyebath. Any lengthening of the antero-posterior axis of the globe was watched for by ophthalmoscopic examination. He could see just the same when the eyelids were held away from contact with the globe. When the pupils were semi-dilated with cocaine he could still read J. 1 with + 13 in ordinary daylight with the right, but only J. 2 with the left. When the pupils were fully dilated with atropine he could only read J. 10 with + 13 in ordinary daylight, but in the dark room with a strong light concentrated on the test-type he still read J. 1 better with the right eye than with the left. When examined with the pupils well dilated it was seen that in the right eye there was a membrane with a sharply defined central circular aperture in it, 3·5 mm. in diameter. In the left eye the aperture was larger and more oval in shape; the membrane in it, moreover, did not occupy the entire pupillary area, a space being left at the circumference between it and the pupillary margin. Both pupils were regular, free from any adhesions, and acted very briskly to light. Mr. Treacher Collins considered that the evidence he had collected in connexion with this case went to show that there was not any true accommodation; that the boy's power of seeing clearly at different distances was due to the cutting off of circles of diffusion, partly by the contraction of the pupils, but mainly by the small central openings in the membranes. He quoted several other cases which had been recorded, in which apparent accommodation was present after the removal of the lens, and advocated trying to adopt the technique in operations for soft cataract so as to produce a condition similar to that in the case here described.

Mr. TREACHER COLLINS described a case in which an

Epibulbar Epithelioma Completely Disappeared after the Application of Radium Bromide.

A man, aged 80, had a new growth about 10 mm. in diameter at the limbus in his left eye. It had formed in two years, and was gradually increasing in size. A small piece was cut off, and microscopical examination of it showed it to be an epithelial growth, which was extending into and infiltrating the episcleral areolar tissue. At the Radium Institute the patient had 10 mg. of radium bromide on a circular disc 1 cm. in diameter, unscreened; it was held continuously over the growth for 50 minutes by a relay of assistants. After this the growth gradually disappeared. At the end of a fortnight only a thickening at the margins was left. It was now five months since the treatment, and all that could now be seen at the site was a smooth greyish scar. The way in which epibulbar epitheliomatous growths permeate the lymphatic channels and spaces in and about the eye was then demonstrated by a series of lantern slides. It was shown how, for a long time, the sclerotic resisted

such permeation and the growths remained superficial, and while this stage lasted they would be eminently amenable to treatment by radium.

Dystrophies of Cornea and Glaucoma.—Primary Pneumococcal Choroiditis.—Artificial Maturation of Cataract.—Sarcoma of Socket.

Mr. GRAY CLEGG read four communications. The first was on Dystrophies of the Cornea and Glaucoma, with especial reference to a familial variety of the former. Changes in the cornea occurred which resembled those found in glaucoma, but there was no tension element. Two sisters in a family of three were shown, all affected by the disease, which probably existed in at least one other relative. Another case was related in which similar changes were present; but as there was a doubtful tension element iridectomy had been done in one eye and trephining in the other without any beneficial effect on the corneæ.

The second paper was on Primary Pneumococcal Acute Choroiditis. The disease occurred in a healthy male aged 27. It affected the right eye, which had been previously examined and found healthy. At first the appearances were considered by three oculists to be those of tubercle, consisting of two blurry yellowish-white foci at the macula. In spite of treatment an acute panophthalmitis developed, and 29 days after being first seen a Mules's operation was performed. A specimen taken at the operation showed a pure culture of the pneumococcus of Friedländer.

The third paper was on a method of Artificial Maturation of Cataract allowing of early extraction. The method was, briefly, as follows. The night prior to operation the pupil was well dilated with atropine, and paracentesis was performed with an iris knife. Massage was applied directly to the lens capsule by a smooth iris repositor, and this was followed by indirect massage by the back of a lens scoop. Atropine was again instilled. If no irritation resulted no more atropine was used after the day of operation. Often within a week the eye was perfectly quiet, the pupil returned to its ordinary size, and regained its activity. Extraction could then be resorted to, either without or with iridectomy. In this way the whole process could in many cases be gone through in three weeks to recovery.

The last paper described a case of Sarcoma of the Socket. The patient had already had his left eye removed and was wearing an artificial eye. About August, 1910, it would not keep in position owing to the presence of a pediculated growth towards the outer part of the socket. The mass was excised, but in November, 1910, it recurred. A section of the original growth raised suspicions of malignancy, and a few days later the lid margin with the conjunctiva and the whole contents of the orbit were removed. The structure, as described by Professor Walker Hall, was suggestive of perithelioma. Possibly the tumour was caused by a fine crack in the artificial eye which he had been wearing.

Mr. W. B. INGLIS POLLOCK (Glasgow) read a paper on

Dissolving Senile Cataract in the Early Stages.

In a consecutive series of 100 patients with senile cataract who were under treatment for not less than three months with alkaline lotions and dionine, fibrolysin, and iodolysin drops, 45 per cent. of the 178 eyes showed great improvement and 41 per cent. an improvement in vision; 7 per cent. remained stationary. In 8 per cent. the treatment failed to arrest the progress of the cataract. The method did not cause pain and could be persevered with over long periods. Attention should be directed to the general health, and the internal administration of an alkali was an advantage. Several patients had, he said, remained free of recurrence for a period of from three to six years.

Lieutenant-Colonel H. HERBERT, I.M.S., read a communication on

The Capsular Opacities of Morgagnian Cataract.

He showed photomicrographs of the capsule of a very long-standing cataractous lens which had passed beyond the Morgagnian stage. The capsule showed scattered white dots clinically. Under the microscope these were found to consist of spaces formed between layers of thickened capsule, and containing mainly lens débris similar to the "milk" of the cataractous lens. Reasons were given for supposing that similar changes may account for the globules or clear rings of after-cataract. And reference was made to two processes at work, singly or together, in senile cataract. The one, representing simply deficient nutrition, resulted eventually in an abnormally dry, shrunken lens. The other, apparently due largely to destruction of the lens cells lining the capsule, consisted essentially in undue admission of aqueous into the lens, and its results.

Hyperplasia with Colloid and Amyloid Degeneration of the Episcleral and Circumdural Fibrous Tissues.

Mr. GEORGE COATS recorded a case of conjunctival and orbital growth which commenced in a man aged 25 and progressed slowly during a period of observation of 17 years. Waxy, semitranslucent, nodular masses occupied the bulbar conjunctiva and overlapped the cornea. The patient's health remained unimpaired throughout. Pathologically the condition was essentially a proliferation of the deep episcleral and circumdural fibrous tissues, with a homogeneous form of degeneration which, in its more advanced manifestations, gave the staining reaction typical of amyloid disease. The vessels were similarly affected, and giant cells, lymphocytal infiltration, calcification, and ossification were present. The histology of the case was typically that of "amyloid disease of the conjunctiva," a purely local condition not associated with tubercle, syphilis, &c. The unique feature of the present case was the simultaneous involvement of the orbital tissues.

THE NATIONAL INSURANCE ACT.

The Reduction of Capitation Fees.

THE London Panel Committee, at its recent monthly meeting, gave consideration to the question of the reduction of capitation fees from 1s. 9d. to 1s. per quarter and decided to refuse concurrence with the proposal of the London Insurance Committee to that effect. The London Panel Committee, representing, as it does, those practitioners in the metropolitan area most intimately concerned in the matter with which it was dealing, is not likely to lack support from its constituents. It will also find sympathy accorded to it by other bodies and by individual practitioners elsewhere, who are equally concerned with the unavoidable reduction of the incomes of panel practitioners as the result of the enlistment of insured persons on their lists. At a meeting of Glasgow panel practitioners specially convened to consider the forming of a local branch of the Panel Medico-Political Union, Dr. A. Salter made special reference to what was taking place with regard to fees in London, and submitted to the meeting that precisely the same conditions would be found before long applying to medical men in Scotland. His observations on this topic and the expression of his views with regard to the policy of the Insurance Commissioners were received by his hearers with a cordiality which left no doubt as to the depth of the feeling of anxiety, not unmixed with resentment, provoked by the situation.

To return to what took place at the meeting of the London Panel Committee, the position taken up by those who discussed the resolution and substituted for it an amendment which defined that position more clearly, can hardly be treated by anyone as unreasonable, although, no doubt, the London Insurance Committee, at any rate, might, in existing circumstances, find it difficult to comply with the suggestion thus submitted to it. The recommendation made by the Panel Service Subcommittee was—

> That the Panel Committee do not concur in the proposal of the Insurance Committee to make to each practitioner on the panel during the second quarter of the medical year 1915 two payments in advance of the amount due to him, at the rate of 6d. for each capitation fee of 1s. 9d. credited to him in accordance with the Medical Benefit Regulations, 1913, and that the Insurance Committee be so informed.

The amendment referred to, which was moved by Dr. M. Bernstein in words suggested by the chairman, Dr. H. J. Cardale, was—

> That all words after "that" in the recommendation be deleted and the following substituted: The Panel Committee recognises that a reduction in the Medical Benefit Fund on account of insured persons who have enlisted is inevitable, and accepts it, but it does not agree to a general reduction being made from the lists of all practitioners alike, but considers that the reduction should be made strictly in accordance with the numbers removed from each list.

That reduction in the numbers of patients credited to each practitioner should follow upon the enlistment of a proportion of those patients, many of whom might never return, was inevitable. To lose income in respect of "removal" thus brought about would rank as a necessary hardship inflicted by the war, corresponding to the hardship in the form of loss of earnings endured by many of the medical man's fellow citizens. To lose income and to have the loss assessed arbitrarily and without reference to the question whether the work performed among insured patients is correspondingly diminished, stands upon quite another footing. A medical man in one district might witness the departure of 20 per cent. of his patients, and as they would be the healthiest and those giving him least trouble he would see them go with regret. He would not, however, have the same sense of injustice as would a brother practitioner deprived of 20 per cent. of his income in a district where the percentage of recruiting was very small, and in which, perhaps, on account of the presence of manufactories supplying munitions of war, the pressure of work was raising the percentage of illness among insured workers.

There is a further element in the matter also to which the attention of the London Panel Committee was called with some justice by Dr. Hogarth, who invited the Panel Committee to protest against the proposed reduction in so far as it was due to the failure of the London Insurance Committee to produce a correct register. Mr. R. J. Farman observed, in support of this point, that if the lists had been kept up to date the Insurance Committee would have been able to say at once the number of insured persons on each practitioner's list, and the number of men who had left to join the colours, thus arriving at the exact amount due to each medical man. It will be freely admitted that the amount of clerical work laid by the Insurance Acts upon the London Insurance Committee is very heavy, and that now, with the depletion of clerical staff through enlistment, its weight may be yet more heavily felt; but the criticism expressed above refers to arrears in the compilation of records and statistics which arose before the war, and medical men who themselves suffer severely if they allow the clerical work imposed upon them as members of the panel to get into arrears can hardly be expected to sympathise when the fact that the Insurance Committee has fallen behind in its office work is brought into prominence. They are rather inclined to argue that a committee should place itself or be placed by the legislature, by means with which they are not concerned, in a position to keep abreast of its routine duties, and they do not forget the difficulty and illwill which arose, markedly in London, but in other areas as well, out of delay in the allocation of patients, and the consequent creation of "unallotted funds."

Dr. Hogarth called attention also to another aspect of the case in protesting against any reduction being made at all as the result of enlistment. Medical men, he pointed out, undertook their work in normal times of peace; now they were asked to see themselves deprived temporarily of patients who were healthy and strong when the bargain for their treatment was struck, but of whom many would come back before long maimed and broken in health. They were left at present with an increased proportion of the worst of the insured, the best having gone. They were going to receive back a large number of the latter as ailing persons, and so to suffer severely as a body from the aftermath of war.

The position briefly summarised above is undoubtedly a difficult one for the medical practitioners upon the panel in London and in other areas as well. It is also by no means an easy one for the Insurance Committees, especially in the metropolis. To place the matter on a business footing, for such is the proposal of the London Panel Committee, and to pay each practitioner his agreed remuneration in respect of each patient whom he is liable to be called on to treat, would apparently in the present circumstances be a clerical operation of considerable magnitude. The urgency of the matter increases the difficulty and also the inevitable hardship to medical men, for the question has arisen over advances—that is to say, over the payment of instalments of income which is not, strictly speaking, due till the end of the year. The question was asked at the meeting of the London Panel Committee as to the position created by a refusal to agree to the proposed reduction, and the chairman frankly said that it would "hang the money up" of which the constituents of those present might be in urgent need. It is unfortunately too late now to point out that the capitation system adopted, after deliberation and discussion, in normal times of peace has not proved the best adapted for the emergency of war, and has produced a state of affairs which would not have arisen under a system of payment by fees for work done.

London Insurance Committee.

The report of the Medical Service Subcommittee laid before the London Insurance Committee at its last meeting showed that the subcommittee had only had before it in the period March 26th to April 16th seven complaints made against medical men by their patients, and that these did not even allege any serious ground of complaint. In three instances the case was met by the transfer of the patient to the list of another medical practitioner, the first medical man either asking for, or acquiescing in, the change. In another a charge of failing to provide adequate treatment was found not to have been substantiated. In two there had been irregularity in the matter of certificates of incapacity, and the medical man was recommended to be so informed, and in the seventh, the practitioner having been informed that he was not entitled to a fee which he had been paid, had returned it to the patient, and the matter was allowed to rest there. In this last instance the question was whether there had been a miscarriage on the part of the complainant, for which the medical man on the panel should have given his attendance as for an illness, or a birth, for which he would have been entitled to make a charge. The conditions necessary to constitute a confinement as contemplated by Clause 2 (1) of the practitioner's agreement are the issue of a living child, or labour after 28 weeks' pregnancy whether the issue be alive or dead. The complainant alleged four months' pregnancy and a miscarriage. The practitioner was of the opinion that his patient had been pregnant for six months and thought himself entitled to charge, but the subcommittee pointed out that he was wrong as to this upon his own showing, as there had not been the birth of a living child. In another case in which a medical man was concerned he was the complainant and secured the transfer of one of his patients to another practitioner's list.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

A COMITIA was held on April 29th, Dr. FREDERICK TAYLOR, the President, being in the chair.

The following candidates having passed the required examination were admitted Members of the College:—Cyril Dudley Kely Corbett, M.D. Oxon., L.R.C.P., and Joseph Strickland Goodall, M.B. Lond.

Licences to practise physic were granted to 101 candidates who had passed the necessary examinations.

The following Members were elected Fellows of the College:—Archibald Donald, M.D. Edin. (Manchester); George Gavin Morrice, M.D. Cantab. (Weymouth); Thomas Beattie, M.D. Durh. (Newcastle-on-Tyne); Noel Dean Bardswell, M.D. Edin. (Midhurst, Sussex); Frank Cecil Eve, M.D. Cantab. (Hull); John Hay, M.D. Vict. (Liverpool); George William Watson, M.D. Lond. (Leeds); Reginald Charles Jewesbury, M.D. Oxon.; Edwin Greaves Fearnsides, M.D. Cantab.; Thomas Renton Elliott, M.D. Cantab.; and John George Adami, M.D. Cantab. (Montreal, Canada). Grafton Elliot Smith, M.D. Sydney, F.R.S. (Manchester), was also elected a Fellow of the College under By-law LXXI.

The President was re-elected a representative of the College on the Senate of the University of London.

Two communications were received from the Secretary of the Royal College of Surgeons of England, dated March 12th and April 9th, 1915, respectively, reporting proceedings of the Council of that College on March 8th and April 8th.

A report from the Committee of Management was received and adopted, dated March 8th, recommending that the University of Illinois be added to the list of foreign universities recognised by the Examining Board in England; another report, dated March 15th, was also received and

adopted recommending that the following Portuguese Universities be added to the list: University of Coimbra, University of Lisbon, and University of Oporto.

Another report from the Committee of Management, dated April 21st, referred to a letter received from the Dean of St. Bartholomew's Hospital Medical School suggesting that during the war it might be possible to shorten the curriculum for medical students; and a letter had also been received from the Director-General of the Army Medical Service expressing the hope that the Royal Colleges would give the matter their most earnest consideration. The Committee of Management were of opinion that it was not desirable that the two important requirements of the regulations—(1) a minimum curriculum of 57 months, and (2) a minimum period of clinical study during two winter and two summer sessions after passing in anatomy and physiology—should be relaxed at the present time. The committee desired to point out, however, that under the regulations of the board they had power to grant exceptions to the regulations and that they had already exercised this power in cases where the two important principles above referred to had not been involved. They were prepared to antedate the commencement of the curriculum in cases where students had pursued medical or scientific study before passing the Preliminary Examination, or before entrance at a medical school, and they believed, from inquiries which had been made, that this procedure would enable the majority of the students referred to by the Dean in his letter to enter for the Final Examination three months earlier than would otherwise have been possible, and yet with a full curriculum of 57 months. The report was adopted.

After some further formal business the PRESIDENT dissolved the Comitia.

ASYLUM REPORTS.

Roxburgh, Berwick, and Selkirk District Board of Lunacy (Annual Report for the Year ending May 15th, 1914).—The total number of patients under treatment during the year was 398, the average daily number resident being 321·1. The patients admitted during the year numbered 71, and of these 15 had been previously under treatment in this asylum. Hereditary predisposition to mental disorder was ascertained to exist in 25 cases, and more than half of the cases suffered from some form or other of bodily disease for which medical treatment was required. In 18·3 per cent. of the total admissions the age was over 70 years. The discharges numbered 40, with a recovery rate of 33·8 per cent., calculated on the total number of admissions. The rate of mortality calculated on the average number resident was 7·6 per cent. Pulmonary tuberculosis was ascertained to be present in an active form in 20 per cent. of the deaths.

East Sussex County Asylum, Hellingly (Annual Report for the Year ending March 31st, 1914).—The total number of cases under treatment during the year 1913 was 1374, the average daily number resident being 1122. There were 228 direct admissions. With regard to these, the most noticeable features were the diminution in the number of those suffering from what may be called the more obvious forms of insanity—i.e., acute mania and acute melancholia, and the increase in the number of patients suffering from dementia præcox (primary dementia) and those forms of insanity due to toxic causes, such as confusional insanity, acute and chronic hallucinatory insanity; there was also an increase in the number of patients suffering from delusional insanity, more especially the paranoid form. It would appear that the prognosis so far as complete recovery is concerned is in many of these latter forms of insanity not very favourable, and, moreover, that the type of insanity in this district seems to be gradually changing. The discharges numbered 141, with a recovery rate on the direct admissions of 41·66 per cent. A considerable proportion of patients were sent out at first "on trial," and the After-Care Association has recently decided to assist these patients in the same way that they do those discharged "recovered." There were 102 deaths, making a rate of 9·09 per cent. on the average daily number resident. Tuberculosis was the cause of death in 10·7 per cent. of the total number. The causes of death were verified by post-mortem examination in 74 per cent. The number of post-mortem examinations has considerably decreased since the Commissioners expressed the opinion that before any examination is made the consent of the friends must be obtained after the death of the patient.

Govan District Asylum, Hawkhead, Paisley (Annual Report for the Year ending May 14th, 1914).—The total number of cases under treatment during the year was 956, the daily average number resident being 654·3. The total number of admissions was 309, of whom 261 were first admissions and 48 were readmissions. There were 176 patients discharged, with a recovery rate calculated on the total admissions of 27·5 per cent. This is a low recovery rate, but it is accounted for to a large extent by the fact that the Govan parish authorities have to take charge, in the first instance, of many patients who fall ill within their district, although they have not a settlement in the parish (deports from Canada and America included). Many of these are afterwards transferred to the asylums of their own districts before recovery has taken place. The deaths were at the rate of 19·1 per cent. of the average daily number resident. Among the factors found to be associated with the outbreak of the mental disorders there stand pre-eminent: (1) Physical debility and disease; and (2) alcoholic excess. Of the patients admitted, over 78 per cent. were in an unsatisfactory state of health. In a considerable proportion of cases the patients on admission were suffering from the terminal stages of bodily diseases, and this is reflected in a high death-rate and a low recovery rate. Alcoholic excess was present as the predominant causative agent in no less than 25·2 per cent. of the men and 7·6 per cent. of the women. As a rule, alcoholic excess was found to be associated with a reduced physical condition or actual bodily disease. In 28 per cent. of the male alcoholics, however, the general physical condition was fair, and no evidence or history of previous bodily disease was obtained. The figures given above relate exclusively to patients admitted for the first time. When this is considered in conjunction with the fact that a considerable proportion of individuals suffering from acute forms of alcoholic mental disorder (e.g., delirium tremens) are not now sent to the asylum, but are treated in the observation wards of the parish hospital, it can hardly be denied that excessive drinking habits are largely responsible for the prevalence of mental unsoundness in the community.

Stirling District Lunacy Board for the Counties of Stirling, Dumbarton, Linlithgow, and Clackmannan (Annual Report for the Year ending May 15th, 1914).—The total number of cases under treatment during the year was 1073, the average number resident being 794. The total number of admissions amounted to 294, which is the largest number during any year since the opening of the asylum. Fifty-eight of those admitted had been under treatment before. Alcoholic excess was found to be the cause in 75 cases, or 25 per cent. of those admitted. In 69 cases, or 23 per cent., an inherited predisposition was admitted, and in 106 cases the mental breakdown had occurred at one of the critical periods of life. There were 182 patients discharged, with a recovery rate calculated on the total admissions of 39·4 per cent. The deaths during the year numbered 105, making a death-rate, calculated on the average number resident, of 13·2 per cent. This is the largest death-rate in any one year since the asylum was opened, and is entirely due to the large number of cases admitted in a weak and exhausted condition.

Lanark District Asylum, Hartwood (Annual Report for the Year ending May 31st, 1914).—The average daily number resident in the asylum during the year was 1001, and the total number of admissions was 220. With regard to the causes of insanity, intemperance appeared in 26 cases, heredity in 15, epilepsy in 15, and senility in 25. The number of cases discharged was 106, and there were 65 deaths. The recovery rate was 37 per cent., reckoned on the certified admissions, and the death-rate 6½ per cent. on the average number resident. This is the lowest death-rate since 1903. Of the 65 deaths, 10 were due to general paralysis of the insane, 13 to morbus cordis, and 12 to phthisis pulmonalis. Great attention continues to be paid to the industrial employment of the patients. The levelling of the site of the new hospital was carried out wholly by the labour of the patients.

REPORT ON THE CONTAGIOUS DISEASES OF ANIMALS.[1]

THE report by Mr. A. W. Anstruther, presented to both Houses of Parliament by command of His Majesty, gives a good idea of the work the Board of Agriculture and Fisheries is doing in regard to the prevention, eradication, and control of the contagious diseases of animals. It marks an advance on any previous report yet issued, from the point of view both of the more exact methods used against disease in the light of experience gained in past years and of the pliability of scientific procedure in dealing with a scourge that in this country has baffled all preventive and curative measures for many years and has resulted in a great and largely unproductive expenditure of public money. We refer to sheep scab and swine fever.

An assurance that in a number of cases the ophthalmic test for glanders had been applied would have further rounded off some of the scientific features of this report. On the whole, however, it may be said that the record is a progressive and gratifying one, and if military operations had not checked and hindered the work of the Board it would have been still more gratifying. The war has necessitated the local authorities and their police being temporarily relieved of some of their duties; and some of the Orders, notably those against tuberculosis and mange, have been for a time suspended, whilst others have been somewhat modified.

Foot and Mouth Disease.—Tuberculosis.

Foot and mouth disease has caused the authorities much trouble and anxiety, especially on the administrative side, and since Jan. 31st, 1914, it has needed almost constant attention. Here the prompt measures taken against 29 suspected cases and 27 confirmed outbreaks have been quite effective. The fact that a good position has been maintained in regard to this disease, notwithstanding military operations and the consequent disorganisation of control methods, is very praiseworthy, whilst the value of nipping outbreaks of the epizootic in the bud cannot be over-estimated. Failure to secure early control of the disease is invariably disastrous in its consequences, as witness the outbreaks in America during the late months of last year. Preventive measures included a special order in regard to the landing of animals from Ireland, and in connexion with this it is to be noted that the report mentions that "the arrangements for the detention of animals under veterinary supervision at the port of landing have undoubtedly been useful from the point of view of reducing the risk of the spread of the disease in Great Britain as well as beneficial to the animals themselves."

Advance has been made in regard to tuberculosis, and improvements in the new Order operative from July 1st to August 6th (the date of the suspension) include the obligation of notification of those animals suffering from a chronic cough and showing definite clinical signs of tuberculosis, fixing the basis of animal valuation at the market rate, and allowing a refund from the Imperial Exchequer to the local authorities of three-fourths of the gross compensation (i.e., without any deduction in respect of the proceeds of the sale of carcasses) computed on the market value of the animal as ascertained by the valuer. The new Tuberculosis Order remains in abeyance until Oct. 1st, 1915. The notifications in July were 766, as compared with a monthly average of 568 animals under a 14 months application of the old Order. It is assumed, therefore, that there will be a marked increase in the subjects to be dealt with when the Order is revived on the same date that the Milk and Dairies Acts come into force—viz., Oct. 1st, 1915.

Swine Fever.

Gloomy to read is the statement that since 1896 the total number of cases of swine fever in Great Britain has never been higher than in 1914, and 4356 outbreaks have been confirmed. The increase in cases is ascribed chiefly to virulent outbreaks in Suffolk, Essex, and West Sussex, to the pressure on the inspectorate indirectly due to the war, and to the exceptional conditions existing in the eastern and southern counties owing to military operations. The comparatively mild winter and the great amount of wet and humid weather, combined with the increase of pig-breeding operations, probably also had their influence in augmenting the number of outbreaks. The total increase of swine in Great Britain, at the count taken in June, was 400,394, a very gratifying advance from both an economic and a zootechnical point of view.

We now come to one of the most important and valuable points in the report—important because a commencement has been made with a method of dealing with the disease long since adopted in other countries, and valuable because we shall soon know what a changed plan of action is likely to accomplish in this country. We have travelled too long on the old well-trodden way without getting any nearer to our journey's end.

On Jan. 26th, 1914, the Swine Fever Committee reported rather adversely on hitherto known methods of artificial immunisation against swine fever, but it indicated that existing modes of inoculation might be serviceably employed in controlling the disease, and it advised further experimenting to discover a trustworthy form of vaccination. A Departmental Committee recommended field observations upon selected premises with regard to serum treatment. These have been undertaken in a district round Colchester, where a virulent form of the disease was present, and the committee will soon be in a position to make a final report on the value of the method. Of course, any judgment to be useful presupposes that adequate administrative and hygienic measures will accompany the serum and virus treatment. American and German authorities assert that the double method of treatment by serum and virus blood bestows immunity for life.

Sheep Scab, Anthrax, Glanders, &c.

The double dipping Sheep Order is the result of lessons learnt from experience, and it is rather surprising that it has not been adopted earlier. Sheep scab is now to be seriously combated, and we may look to its decrease in the future. It is a pity the operation of the Order has had to be suspended, but it will be reimposed at an early date.

The outbreaks of anthrax were 128 more than in 1913. There appears to be an intimate connexion between them and the importation and use of artificial feeding-stuffs. These are legion and multiply every month. Several outbreaks on the continent have been traced to infected fish meal. We shall never improve on natural methods of feeding by artificial ones, but labour on the land never seems so productive as manufacturing operations, at any rate it is not so well organised. The perspiration of the body seems rapidly giving way to the sweat of the brow.

Glanders shows a steady decline, there being a drop of 65 in the number of outbreaks as compared with last year. A healthy result and very creditable to the Board. The trade in Russian ponies, which previously caused some outbreaks of glanders, has been suspended.

Parasitic mange shows a decrease of 279 outbreaks, but the Order is now suspended, which is unfortunate. We should have liked to read the opinion of the Board as to the reason why the disease is far and away most prevalent in London, Lancashire, and the West Riding of Yorkshire.

The dogs imported into Great Britain numbered 1250, which exceeds all previous records. They were all subjected to the Quarantine Order.

The trade in old horses materially improved under veterinary supervision up to August 3rd, 1914, when the Royal Proclamation with respect to the export of animals put an end to it.

[1] Annual Report, by the Assistant Secretary of the Animals Division, Board of Agriculture, of Proceedings under the Diseases of Animals Acts, the Markets and Fairs (Weighing of Cattle) Acts for the Year 1914. London: Darling and Sons, Limited, Bacon-street, E.; Wyman and Sons, Limited, 29, Breams Buildings, Fetter-lane, E.C. Price 5½d.

ROYAL COLLEGE OF SURGEONS IN IRELAND AND THE CASTLE HOSPITAL.—The students of the Royal College of Surgeons, with the aid of Licentiates and Fellows, are endeavouring to maintain one ward in the Dublin Castle Red Cross Hospital. A concert in aid of this undertaking was held recently in the hall of the College, and a satisfactory sum was realised. A chief feature of the concert was a prologue written for the occasion by Mr. Oliver Gogarty, F.R.C.S. Irel.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE undermentioned have been appointed Surgeons for temporary service in His Majesty's Fleet:—Dated April 23rd: Jack Rupert Law Willis and William Hunter Kay. Dated April 24th: John Cadzow Sinclair.

The following appointments have been notified:—Temporary Surgeons: E. F. Fox to the *Victory*, additional, for Engineering Unit, R.N. Division, Deal; H. G. Moser to the *Neptune*; J. R. L. Willis to the *Vivid*, additional, for disposal; W. S. Lynd, J. S. Kennedy, and D. S. Falconer to the *Victory*, additional, for Haslar Hospital; J. C. Sinclair and W. H. Kay to the *Pembroke*, additional, for disposal; and W. E. Goss to the *Vivid*, additional, for disposal.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon Charles Devereux Marshall has been promoted to the rank of Staff Surgeon (dated March 31st).

ROYAL ARMY MEDICAL CORPS.

Major Arthur W. Mayo Robson, C.V.O., to be temporary Lieutenant-Colonel (dated March 1st). Alexander George Pemberton Gipps, late Fleet-Surgeon, Royal Navy, to be temporary Major (dated March 18th, 1915).

The undermentioned to be temporary Majors: William Pearson (dated April 7th) and James Laidlaw Maxwell (dated April 8th).

The undermentioned temporary Lieutenants to be temporary Captains:—Dated May 5th: Francis Hernaman-Johnson, late Surgeon, Royal Navy; Ernest W. Witham, late Surgeon-Captain, Assam Valley Light Horse. Dated May 4th: Albert T. Duka, D.S.O.

The undermentioned to be temporary Captains:—Dated April 7th: John Heatly Spencer, Charles Edward Murphy, Gerald Theodore Sylvester Sichel. Dated April 9th: Hector Munroe. Dated April 14th: John Aldington Gibb and Sir Vincent Nash.

The undermentioned to be temporary Lieutenants:—Dated Feb. 27th: George Norman Lorimer and Cletus McShane. Dated March 9th: Matthew Edward Robinson, Hugh Noel Murray Puckle, Reginald Morley Clarke, John William Farrar, Alan Thomas Roberts, George Dibbs King Waldron, James Ian Munro Jamieson, William Eric Giblin, William Angwin Edwards, Donald Francis Finlay, Leslie John Jarvis Nye, Lionel Braim Daly, Francis Esmond Keane, George Alexander Birnie, and Oswald Barton. Dated March 22nd: Henry Reynolds Brown. Dated March 23rd: William Arthur Rees. Dated March 25th: Herbert Ernest Clutterbuck and Sydney Williams. Dated March 27th: Thomas Paterson Noble. Dated March 30th: Theodore Henry Whittington. Dated March 31st: Ernest Harold Drinkwater. Dated April 1st: Bernard Hugh Stanley Aylward and Ernest Augustus Aylward. Dated April 7th: David Riddell, Ernest Emrys Isaac, Cuthbert John Nicholson, Frederick Talbot Driffield Clindening, Ninian McIntire Falkiner, Reginald Torriano Cooke, James Wodderspoon Bennett, Adolphe Abraham, Max Hershel Edward Richard Montesole, Hubert Vere Leigh, Roger Llewellyn Williams, John William Heekes, Thomas Dinnen Jago, Cecil Hutchinson Hopwood, William Frederick Abbott, Ernest Wardlaw Milne, Arthur James Henry Boyton, Clarence Brian Dobell, Frederick Aylmer Hort, Ian Campbell, Harry Crichton, Thomas Fearnhead, Charles Launder Chalk, Frank Louis Underwood, Everard M. le Poer Power, Martin Remers, George Burrows Brown, Duncan MacNab Callender, Lanchlan Rose, John Brown, William Douglas Knocker, John Murdo MacPhail, George Aubrey Jelly, William Kirk, Charles Fortescue Pricham, Robert Michael Ferde, Thomas Paul Gray, John Ross Hoare Ross, Anthony Ashley Cooper, John Musgrave Twentyman, Ernest Morley Rooke, Charles Augustus Farrell, Marshall Hall, Alfred Ernest Carsberg, Reginald Wilton Trevor Clampett, George Howard Stretteli Letchworth, Francis Sidney Mitchell, Claude Ernest Willington Wilmot, Edward Chapman Wallace, Robert Morrison Clarke, Robert Maxwell Chance, Harold Arthur Upward, Henry Herbert Clarke, and George Min Adam. Dated April 8th: Ernest Villiers Hunter, John Black Mason, Cuthbert John Butler, Benjamin Sweeter, Henry Hope Knox Sparrow, William Leggett, John Thomas Hurst, Benjamin Banks Ferrar, Robert Buchanan, William Wilfred Banham, John Henry Blakeney, Robert Scott Dewar, Cyril Herbert Thomas Ilott, George Maxwell Elliott, James Arthur Richard Lee, Alexander Charles Profeit, Robert Alexander Garden Whiting, Fife Slater, Isaac Alexander Davidson, and Norman Grenville Walsh Davidson. Dated April 9th: Robert Mitchell MacKay, Stanley James Annear Beale, Edward Alban Evans, William Macdonald, and Thomas Arthur Fuller. Dated April 10th: Ralph Christopher Fuller, Frederick Michael Kirwan, William Edmund Cooke, William Henry Hooton, George Frederick Holt, Frank Jerome Dunne, Alexander John Campbell, Finlay Stewart Campbell, Andrew Adams Rutherford, David McKinlay Reid, Henry Harold Robinson, Gerald Irving Moriarty, Hugh Tennant Prince, Augustus William Tabuteau, Cyril William Jenner, John Harold Mason, and William Walter Dickson. Dated April 12th: John Stephen Herbert Lewis, Redcliffe Nathan Salaman, John Travers McConkey, Charles Alfred Whiting Pope, Wallace Tynemouth Hedley, Edward Henry Pollock Brunton, Thomas Strain, Andrew Graham Ritchin Ritchie, George Albert Simpson, Daniel Cowin, and William Southmead Langworthy. Dated April 13th: Robert Richards, William Christopher Gavin, John Milnes Pooley, and Edmund William Lynch. Dated April 14th: William Alister Alexander, Percy Ellwand Middleton, Wilfred Edgcumbe Burrows, Walter Salisbury, Herbert John Hickin, Frank Brickwell, Alexander Elmslie Campbell, Charles James Armstrong-Dash, Ernest George Klumpp, Victor Harold Mason, Ian Macfarlane, and Henry Edward O'Brien.

Temporary Lieutenant Charles Gibson, having ceased duty with the British Red Cross Hospital, Netley, relinquishes his commission (dated April 19th).

Temporary Lieutenant Raymond J. Jones relinquishes his commission (dated Feb. 28th), as does also Temporary Lieutenant Edward M. Hime (dated April 27th).

INDIAN MEDICAL SERVICE.

The King has approved the promotion of the following officer:—Temporary Lieutenant to be Temporary Captain: Thomas Henry Bishop (dated April 18th.

The promotion of Major William Reith John Scroggie is antedated from Jan. 29th, 1914, to July 29th, 1913.

The King has approved of the retirement of Lieutenant-Colonel Robert Henry Elliot.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned ex-Cadets of the Officers Training Corps to be Lieutenants (on probation): Austin Basil Clarke, James Gordon Wilson, and Alfred Thomas Logan.

Captain Philip N. Button resigns his commission on appointment as temporary Surgeon, Royal Navy.

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd East Lancashire Field Ambulance: Lieutenant William J. Reid to be Captain, and to remain seconded.

Highland Mounted Brigade Field Ambulance: George Munro McLeod to be Lieutenant.

1st East Anglian Field Ambulance: Lieutenant Gilbert C. Gray to be temporary Captain.

1st Home Counties Field Ambulance: Henry George Lynwood Allford (late Captain, Territorial Force Reserve, General List) to be Captain (temporary).

1st East Lancashire Field Ambulance: Captain Charles Roberts is restored to the establishment.

5th London Field Ambulance: Captain John H. Dixon, from the London Mounted Brigade Field Ambulance, to be Captain.

1st North Midland Field Ambulance: Lieutenant Kenneth B. Clarke, from the Eastern Mounted Brigade Field Ambulance, to be Lieutenant.

2nd Northumbrian Field Ambulance: James Gill Hill to be Lieutenant.

4th London General Hospital: Francis Whittaker Tunnicliffe to be Captain, whose services will be available on mobilisation.

1st Northern General Hospital: The undermentioned to be Lieutenants: Sydney Havelock, Charles Henry Keay (late Cadet Lance-Corporal, Durham University Contingent, Senior Division, Officers Training Corps).

5th Northern General Hospital: Captain Bernard Stracey, from the North Midland Casualty Clearing Station, to be Captain, whose services will be available on mobilisation.

2nd Scottish General Hospital: James Miller to be Captain, whose services will be available on mobilisation.

2nd Western General Hospital: Captain Wilson H. P. Hey is seconded for service with No. 18 Field Ambulance, Royal Army Medical Corps, Special Reserve. Captain Charles Roberts, from 1st East Lancashire Field Ambulance, to be Captain.

1st London (City of London) Sanitary Company: Daniel McPherson Taylor to be Lieutenant.

Lowland Casualty Clearing Station: Lieutenant Geoffrey B. Fleming to be Captain.

South Midland Casualty Clearing Station: Major Peverell S. Hichens, from Attached to Units other than Medical Units, to be Major.

Northumbrian Casualty Clearing Station: Harold Muir Evans (late Surgeon-Captain, 1st Norfolk (Volunteers) Artillery) to be Major (temporary). Second Lieutenant Colin Mearns, from the Durham Light Infantry, to be Lieutenant.

West Riding Casualty Clearing Station: Peter McEwan to be Lieutenant.

London Mounted Brigade Field Ambulance: Captain William B. Thomas to be temporary Major.

3rd East Anglian Field Ambulance: John Norman Robins to be Lieutenant.

3rd Lowland Field Ambulance: Lieutenant Archibald C. McMaster to be Captain.

2nd Eastern General Hospital: Harold Harris Elborough Scatliff (late Captain, Sussex Royal Garrison Artillery) to be Captain, whose services will be available on mobilisation (temporary).

Attached to Units other than Medical Units.—Lieutenant Louis B. Stringer resigns his commission.

INDIAN MEDICAL SERVICE COMMISSIONS.

An examination for not less than 10 Commissions in His Majesty's Indian Medical Service will be held in London on July 12th, 1915, and the five following days. Particulars and forms of application can be obtained from the Military Secretary, India Office, London, S.W.

JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The current number of this journal, dated January, gives first place to a preliminary note on the treatment of anaerobe-infected wounds with lactic acid. While engaged in the study of the flora of septic wounds it occurred to Major L. W. Harrison, D.S.O., the author of the note, that since anaerobes of the gas-brand and malignant œdema series degenerate, fail to spore, and do not liberate toxin in a distinctly acid culture medium, wounds might be treated in a manner which would make the discharge distinctly acid to litmus. Two severe cases are described in which wounds were treated with lactic acid, and, although one patient died, Major Harrison believes that the activity of the anaerobes was hampered more than by other modes of treatment. He has no evidence, however, that lactic acid is of any use against cocci. In a joint paper by Major E. A. Bourke, Lieutenant Idris D. Evans, and Lieutenant Sydney Rowlands on Preliminary Observations on the Use of an Autogenous Living Vaccine in the Treatment of Enteric Fever the authors describe six cases in which the employment of autogenous living vaccine produced satisfactory results, and the writers hope that the method of treatment will be given a more extensive trial. Major M. F. Foulds has an interesting note on the use of tincture of iodine in the prevention of venereal diseases. Among other contents of the journal is the description of the conversion of a railway porter's truck into a carrying chair for the wounded and of a form of folding trestle for the conversion of a stretcher into an improvised bed, both useful devices.

VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING MARCH, 1915.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 6·6 per 1000 of the population, estimated at 4,516,612 persons; in the three preceding months the rates were 9·2, 7·4, and 7·4 per 1000 respectively. The lowest rates last month were recorded in Kensington, Chelsea, Hampstead, Poplar, and Bermondsey; and the highest rates in Bethnal Green, Holborn, Deptford, Greenwich, and Woolwich. Two cases of small-pox, both belonging to Greenwich, were notified during the month. The prevalence of scarlet fever showed a marked decline from that recorded in other recent months; this disease was proportionally most prevalent in Hammersmith, Holborn, Bethnal Green, Greenwich, and Woolwich. The Metropolitan Asylums Hospitals contained 2514 scarlet fever patients at the end of the month, against 4431, 3609, and 2989 at the end of the three preceding months; the weekly admissions averaged 278, against 445, 317, and 324 in the three preceding months. Diphtheria was less prevalent than in the previous month; among the several boroughs the greatest proportional prevalence was recorded in Holborn, the City of London, Bethnal Green, Stepney, and Deptford. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1663, 1621, and 1562 at the end of the three preceding months, had further declined to 1362 at the end of the month the weekly admissions averaged 142, against 177, 160, and 172 in the three preceding months. Enteric fever was very much less prevalent than it had been in the preceding month; the greatest proportional prevalence was recorded in Southwark, Bermondsey, Deptford, and Woolwich. The Metropolitan Asylums Hospitals contained 46 enteric fever patients at the end of the month, against 68, 50, and 64 at the end of the three preceding months; the weekly admissions averaged 8, against 10, 6, and 13 in the three preceding months. Erysipelas was proportionally most prevalent in Hackney, Shoreditch, Bethnal Green, Southwark, and Woolwich. The 21 cases of puerperal fever notified during the month included 2 each in Islington, Hackney, Poplar, Bermondsey, Wandsworth, and Camberwell. The cases of cerebro-spinal meningitis numbered 154, this disease being proportionally most prevalent in Hammersmith, Shoreditch, Greenwich, and Woolwich. The 4 cases of poliomyelitis included 2 in Islington and 2 in Wandsworth.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided; the death-rates from all causes are further corrected for variations in the sex and age constitution of the populations of the several boroughs. During the five weeks ending April 3rd the deaths of 9181 London residents were registered, equal to an annual rate of 21·2 per 1000; in the three preceding months the rates were 16·7, 19·6, and 20·7 per 1000. The death-rates during the month ranged from 15·5 in Lewisham, 16·8 in Hampstead, 17·7 in Fulham, 18·1 in Wandsworth, and 18·3 in Hackney, to 25·1 in Finsbury, 25·2 in Chelsea, 26·1 in the City of London, 26·5 in Southwark, and 29·1 in Bermondsey. The 9181 deaths from all causes included 1073 which were referred to the principal infectious diseases; of these, 666 resulted from measles, 38 from scarlet fever, 71 from diphtheria, 188 from whooping-cough, 12 from enteric fever, and 98 from diarrhœa and enteritis among children under 2 years of age. The lowest death-rates from these diseases in the aggregate were recorded in Chelsea, Hackney, the City of London, Shoreditch, and Lewisham; and the highest rates in Paddington, Kensington, Bethnal Green, Bermondsey, and Battersea. The 666 deaths from measles were more than double the corrected average number in the corresponding period of the five preceding years; this disease was proportionally most fatal in Paddington, Kensington, Fulham, Bethnal Green, Bermondsey, and Battersea. The 38 fatal cases of scarlet fever were 17 in excess of the corrected average number, and included 4 in Lambeth and 3 each in Hammersmith, St. Pancras, Stepney, Battersea, and Wandsworth. The 71 deaths from diphtheria were 19 above the corrected average number; this disease showed the greatest proportional mortality in Paddington, St. Pancras, Hackney, Holborn, Bethnal Green, Stepney, Poplar, and Deptford. The 188 deaths from whooping-cough exceeded the corrected average by 22; the highest death-rates from this disease were recorded in Holborn, Finsbury, Bethnal Green, Poplar, Bermondsey, Battersea, Deptford, and Greenwich. The 12 deaths referred to enteric fever were 4 above the corrected average, and included 2 in Paddington, 2 in Poplar, and 2 in Deptford. The mortality from diarrhœa and enteritis among children under 2 years of age was proportionally greatest in Holborn, Bethnal Green, Poplar, Southwark, Bermondsey, Greenwich, and Woolwich. In conclusion, it may be stated that the aggregate mortality in London during the month from the principal infectious diseases, excluding diarrhœa, was nearly 79 per cent. above the average.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8952 births and 6022 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 19·9, 19·0, and 17·4 per 1000 in the three preceding weeks, further fell in the week under notice to 17·3 per 1000 of their aggregate population, estimated at 18,134,239 persons at the middle of last year. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 18·4, against a corresponding rate of 19·6 per 1000 in London. Among the several towns the death-rate last week ranged from 8·4 in Blackpool, 8·9 in Carlisle, 9·2 in Norwich, 9·3 in Southend-on-Sea, and 10·2 in Enfield to 23·8 in St. Helens, 23·9 in Sunderland, 24·0 in West Bromwich, 25·6 in Wigan, and 30·5 in Middlesbrough.

The 6022 deaths from all causes were 41 fewer than the number in the previous week, and included 711 which were referred to the principal epidemic diseases, against numbers declining from 826 to 689 in the four preceding weeks. Of these 711 deaths, 392 resulted from measles, 142 from whooping-cough, 73 from infantile diarrhœal diseases, 56 from diphtheria, 34 from scarlet fever, 12 from enteric fever, and 2 from small-pox. The mean annual death-rate from these diseases was equal to 2·0 per 1000, and coincided with that recorded in the previous week. The deaths attributed to measles, which had declined from 495 to 389 in the four preceding weeks

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MARCH, 1915.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1914.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.								Deaths from all causes.	Death-rate per 1000 living.†
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years).	Total.	Annual rate per 1000 persons living.		
LONDON	**4,516,612**	**2**	**1474**	**787**	**2**	**59**	**—**	**21**	**341**	**154**	**4**	**2844**	**6·6**	**—**	**666**	**38**	**71**	**188**	**12**	**98**	**1073**	**2·5**	**9181**	**21·2**
West Districts.																								
Paddington	142,055	—	37	22	—	—	—	—	12	3	—	74	5·4	—	47	2	3	1	2	4	59	4·3	317	23·2
Kensington	170,817	—	40	17	—	2	—	1	7	8	—	75	4·6	—	54	2	3	5	—	4	68	4·2	337	20·5
Hammersmith	124,750	—	64	13	—	—	—	—	6	15	—	98	8·2	—	17	3	—	5	—	3	28	2·3	260	21·4
Fulham	158,849	—	58	21	—	1	—	1	5	6	—	92	6·0	—	36	2	2	2	1	2	45	3·0	261	17·7
Chelsea	63,791	—	13	9	—	—	—	—	5	1	—	28	4·6	—	4	—	1	1	—	1	7	1·1	162	25·2
City of Westminster	152,346	—	63	26	—	1	—	—	5	4	—	99	6·8	—	11	1	1	2	—	2	17	1·2	294	21·2
North Districts.																								
St. Marylebone	112,892	—	47	15	—	—	—	—	5	3	—	70	6·5	—	20	—	2	3	—	3	28	2·6	220	20·7
Hampstead	86,731	—	19	10	—	—	—	—	5	2	—	36	4·3	—	8	—	1	—	—	1	10	1·2	132	16·8
St. Pancras	212,497	—	61	36	—	3	—	1	14	12	—	127	6·2	—	12	3	6	6	—	6	33	1·6	413	20·2
Islington	324,764	—	89	57	—	5	—	2	16	8	2	179	5·7	—	43	2	6	20	—	4	75	2·4	694	21·7
Stoke Newington	50,454	—	19	11	—	1	—	—	6	1	—	38	7·9	—	10	—	1	—	—	—	11	2·3	97	19·0
Hackney	223,724	—	43	34	—	1	—	2	27	6	—	113	5·3	—	8	—	5	4	—	2	19	0·9	390	18·3
Central Districts.																								
Holborn	45,861	—	23	11	—	—	—	1	2	2	—	39	8·9	—	7	1	2	4	—	2	16	3·6	102	23·3
Finsbury	83,212	—	29	12	—	—	—	1	6	—	—	48	6·0	—	2	—	1	7	—	2	12	1·5	203	25·1
City of London	17,129	—	4	6	—	—	—	—	1	—	—	11	6·7	—	—	—	—	—	—	1	1	0·6	41	26·1
East Districts.																								
Shoreditch	108,869	—	35	21	—	1	—	1	14	8	—	80	7·7	—	6	1	—	4	—	1	12	1·1	212	21·0
Bethnal Green	127,662	—	63	41	—	1	—	—	16	4	—	125	10·2	—	32	1	5	10	—	5	53	4·3	284	24·1
Stepney	273,265	—	101	91	2	3	—	1	22	3	—	223	8·5	—	18	3	6	1	—	4	32	1·2	509	20·2
Poplar	160,222	—	27	22	—	—	—	2	17	5	—	73	4·8	—	33	—	4	11	2	7	57	3·7	386	24·8
South Districts.																								
Southwark	186,941	—	43	32	—	4	—	1	22	3	—	105	5·9	—	37	1	3	8	1	7	57	3·2	472	26·5
Bermondsey	124,213	—	24	17	—	4	—	2	9	2	—	58	4·9	—	30	1	—	26	—	4	61	5·1	348	29·1
Lambeth	296,724	—	89	45	—	3	—	1	22	5	—	165	5·8	—	29	4	4	6	—	6	49	1·7	626	21·6
Battersea	167,338	—	61	31	—	3	—	—	17	4	—	116	7·2	—	41	3	3	20	1	4	72	4·5	365	22·9
Wandsworth	338.998	—	96	58	—	5	—	2	21	12	2	196	6·0	—	68	3	3	12	—	7	93	2·9	586	18·1
Camberwell	262,020	—	74	33	—	—	—	2	11	8	—	128	5·1	—	33	2	2	8	—	3	48	1·9	535	21·1
Deptford	109,182	—	39	27	—	12	—	—	12	3	—	93	8·9	—	15	—	4	10	2	2	33	3·2	249	23·5
Greenwich	96,037	2	76	11	—	1	—	—	9	5	—	104	11·3	—	18	1	1	9	1	3	33	3·6	202	21·5
Lewisham	172,433	—	64	29	—	3	—	—	6	3	—	105	6·4	—	11	—	1	2	1	3	18	1·1	261	15·5
Woolwich	122,836	—	73	29	—	4	—	—	21	18	—	145	12·3	—	16	2	1	1	1	5	26	2·2	223	19·4
Port of London	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup. † The death-rates are corrected for variations in sex and age constitution of the populations of the several boroughs, the population of England and Wales being taken as the standard.

slightly rose to 392 last week, and caused the highest annual death-rates of 3·4 in Sunderland, 3·7 in Edmonton, 3·8 in Wolverhampton, 4·0 in Barrow-in-Furness, 4·1 in Middlesbrough, 4·3 in Merthyr Tydfil, 5·0 in Walsall, 5·3 in West Bromwich, and 6·9 in Northampton. The deaths referred to whooping-cough, which had been 167, 151, and 149 in the three preceding weeks, further fell to 142 last week; the highest recorded death-rates from this disease were 1·3 in Southampton, 1·5 in Walthamstow, 1·6 in Middlesbrough, 1·8 in Great Yarmouth, 2·0 in Wakefield, 2·4 in Rotherham, 2·6 in St. Helens, 3·5 in Stockton-on-Tees, and 5·7 in Wigan. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 67, 63, and 65 in the three preceding weeks, further rose to 73 last week, and included 17 in London, and 4 each in Leicester and Middlesbrough. The deaths attributed to diphtheria, which had been 49, 55, and 49 in the three preceding weeks, rose to 56 last week, of which 12 were registered in London, 5 in Stoke-on-Trent, 3 each in Leyton, Birmingham, and Bradford. The deaths referred to scarlet fever, which had increased from 16 to 29 in the four preceding weeks, further rose to 34 last week, and included 9 in London, 3 each in Manchester and Sheffield, and 2 each in Willesden, Stoke-on-Trent, Birmingham, Bradford, and Gateshead. The fatal cases of enteric fever, which had been 7, 11, and 8 in the three preceding weeks, rose to 12 last week, and included 3 in Salford and 2 each in London, Stoke-on-Trent, and Leeds. The 2 deaths from small-pox belonged to Bristol.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had steadily declined from 6936 to 2359 in the 22 preceding weeks, had risen to 2377 on Saturday last; 316 new cases were admitted during the week, against 275, 263, and 259 in the three preceding weeks. These hospitals also contained on Saturday last 1230 cases of diphtheria, 274 of measles, 62 of enteric fever, and 16 of whooping-cough, but not one of small-pox. The 1575 deaths from all causes in London were 44 fewer than in the previous week, and corresponded to an annual death-rate of 18·2 per 1000. The deaths referred to diseases of the respiratory system, which had been 466, 469, and 392 in the three preceding weeks, further fell to 347 in the week under notice, but were 162 in excess of the number in the corresponding week of last year. The deaths from influenza numbered 30, against 46, 39, and 27 in the two preceding weeks.

Of the 6022 deaths from all causes in the 96 towns 215 resulted from different forms of violence and 408 were the subject of coroners' inquests, while 1703 occurred in public institutions. The causes of 35, or 0·6 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in 13 of its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, and in 56 other smaller towns. Of the 35 uncertified causes of death, 5 were registered in Birmingham, 4 in Liverpool, 3 each in West Bromwich and Gateshead, and 2 each in Stoke-on-Trent, Preston, and Sheffield.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,345,500 persons at the middle of this year, 1285 births and 909 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 20·8, 20·9, and 18·5 per 1000 in the three preceding weeks, rose to 20·2 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 20·1, against a corresponding rate of 18·4 per 1000 in the large English towns. Among the several towns the death-rate last week ranged from 12·8 in Kirkcaldy, 12·9 in Clydebank, and 14·9 in Hamilton, to 21·3 in Coatbridge, 23·3 in Leith, and 25·0 in Dundee.

The 909 deaths from all causes were 75 in excess of the number in the previous week, and included 150 which were referred to the principal epidemic diseases, against numbers declining from 181 to 128 in the four preceding weeks. Of these 150 deaths, 82 resulted from whooping-cough, 36 from measles, 12 from diphtheria, 11 from scarlet fever, and 9 from infantile diarrhœal diseases, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 3·3, against a corresponding rate of 2·0 per 1000 in the large English towns. The deaths attributed to whooping-cough, which had been 75, 90, and 75 in the three preceding weeks, rose to 82 last week, and included 42 in Glasgow, 14 in Dundee, 8 in Edinburgh, and 4 each in Paisley and Greenock. The deaths referred to measles, which had been 41, 19, and 26 in the three preceding weeks, further rose to 36 last week, of which 25 were registered in Glasgow and 9 in Aberdeen. The fatal cases of diphtheria, which had been 11, 7, and 6 in the three preceding weeks, rose to 12 last week, and included 2 each in Glasgow, Leith, and Motherwell. The deaths attributed to scarlet fever, which had been 6, 7, and 7 in the three preceding weeks, further rose to 11 last week, of which 3 occurred in Glasgow, and 2 each in Leith and Clydebank. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 18, 10, and 12 in the three preceding weeks, fell to 9 last week, and included 2 in Leith and 2 in Kilmarnock.

The deaths referred to diseases of the respiratory system, which had been 182, 178, and 145 in the three preceding weeks, rose to 153 in the week under notice, and were 63 in excess of the number in the corresponding week of last year. The deaths attributed to violence numbered 25, against 21 and 30 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,212,380 persons at the middle of this year, 658 births and 444 deaths were registered during the week ended Saturday, May 1st. The annual rate of mortality in these towns, which had been 23·8, 22·1, and 22·4 per 1000 in the three preceding weeks, fell to 19·1 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 21·9, against corresponding rates of 18·4 and 20·1 per 1000 in the English and Scotch towns respectively. The death-rate last week was equal to 19·0 in Dublin (against 18·2 in London and 21·1 in Glasgow), 19·8 in Belfast, 17·7 in Cork, 24·0 in Londonderry, 19·0 in Limerick, and 17·1 in Waterford, while in the 21 smaller towns the mean death-rate was 17·8 per 1000.

The 444 deaths from all causes were 77 fewer than the number in the previous week, and included 35 which were referred to the principal epidemic diseases, against 30 and 41 in the two preceding weeks. Of these 35 deaths, 11 resulted from measles, 10 from infantile diarrhœal diseases, 9 from whooping-cough, 3 from diphtheria, and 2 from scarlet fever, but not one from enteric fever or from small-pox. The mean annual death-rate from these diseases was equal to 1·5, against corresponding rates of 2·0 and 3·3 per 1000 in the English and Scotch towns respectively. The deaths attributed to measles, which had been 16, 5, and 13 in the three preceding weeks, fell to 11 last week, and included 7 in Belfast and 2 in Dublin. The deaths of infants (under 2 years) referred to diarrhœa and enteritis, which had been 3, 5, and 5 in the three preceding weeks, further rose to 10 last week, of which 4 were registered in Dublin and 2 each in Belfast and Lisburn. The fatal cases of whooping-cough, which had been 15, 11, and 20 in the three preceding weeks, fell to 9 last week, and included 5 in Belfast and 2 in Dublin. Of the 3 deaths attributed to diphtheria, 2 occurred in Dublin and 1 in Newtownards. The 2 fatal cases of scarlet fever were recorded in Belfast and Waterford.

The deaths referred to diseases of the respiratory system, which had been 158, 119, and 104 in the three preceding weeks, further declined to 84 in the week under notice. Of the 444 deaths from all causes, 131, or 30 per cent., occurred in public institutions, and 8 resulted from various forms of violence. The causes of 10, or 2·3 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the large English towns the proportion of uncertified causes did not exceed 0·6 per cent.

GLASGOW LOCK HOSPITAL.—The 109th annual report of this institution (for the year 1914) shows that 300 patients were admitted to the hospital, as against 240 in 1913 and 251 in 1912. The number of patients who left irregularly, or before their cure had been completed, was 15. Of the total number of patients admitted during the year 205 were received for the first time, 69 for the second, 23 for the third, 2 for the fourth, and 1 for the eighth time. The 384 out-patients made 1070 visits, as compared with 217 out-patients with 501 visits in 1913. The out-patients of 1914 had all at one time been in-patients. The average period of sojourn in the hospital was 42 days, and the average age of the patients 24 years. The patients included infants and girls of most ages between 2 and 16. The financial statement shows the ordinary income to have been £1301 19*s.* 6*d.*, and the ordinary expenditure £1500 7*s.*, leaving a deficiency of £198 7*s.* 6*d.*, which compares with a deficit of £4 10*s.* 3*d.* in 1913. The extraordinary income consisted of legacies amounting to £131, and after deducting special expenditure there is a debit balance of £390 15*s.* 10*d.* to be carried to capital.

Correspondence.

"Audi alteram partem."

THE MENTAL TREATMENT BILL.

To the Editor of THE LANCET.

SIR,—The letter of Dr. Edwin Ash in THE LANCET of May 1st emphasises the long-felt public want which the Voluntary Mental Treatment Bill introduced into the House of Lords last spring by the Earl Russell completely meets.

Both this Bill and that of Mr. Cecil Harmsworth aim at precisely the same object, for both enable early mental symptoms "in whatever case and from whatever cause" to be "treated" for a limited period without the usual legal certificate. The only difference is that Mr. Harmsworth's Bill provides no safeguards against abuse, and in the opinion of a great number who realise the danger it is felt there should be some guarantee that this power should be used solely in the interests of the sufferer.

In this Bill there is a complete disregard of such an assurance, and this omission may amount to the legal sanction of licence in the name of liberty.

I am, Sir, yours faithfully,

ROBERT ARMSTRONG-JONES, M.D. Lond.

Claybury, May 4th, 1915.

To the Editor of THE LANCET.

SIR,—Will you permit me to make reference in your influential columns to a few points in relation to the Bill "to facilitate the early treatment of mental disorder of recent origin arising from wounds, shock, or any other cause"; which definition makes it applicable to any case of slight mental loss of balance of whatever nature, among civilians as well as among soldiers.

The first announcement of the Bill described it as a "War Emergency" measure, and gave it to be understood that it was introduced for the benefit of the soldiers; but, as admirably pointed out in your leading article of last week, it has no application to soldiers as soldiers at all. The soldier, while he remains in the army, is not certified, the strict military control in which he is there held being quite sufficient as a form of detention. The plea of emergency on the soldier's behalf therefore falls to the ground. It is when the soldier, after discharge from the army, returns to civilian life that he runs the great risk, as a civilian, if still unrecovered, of being placed under detention (should this Bill pass) without the safeguard of any legal procedure or appeal to a magistrate. This is a very serious matter, since it applies to the whole civil population, and introduces a most dangerous innovation, under the specious plea of temporary urgent necessity. The real necessity at all times is that the individual alleged to be of unsound mind should have his case fairly and impartially sifted and be heard in self-defence. Before the passing of the Lunacy Act, 1890, the public had been sharply roused to a realisation of the subterranean perils to which any of them might be at any time insidiously exposed.

A Bill is now brought in of retrograde tendency allowing a person of slight mental instability to be "taken charge of" for profit, and without penalty, for a period of six months, provided only that the person taking him in charge complies with certain regulations to be subsequently made by the Home Secretary and Lord Chancellor who represent the Executive of the Lunacy Commission. The Lunacy Commission is thus to be given the prerogative of substituting its permission or prohibition in this matter for the stringent provisions of the Lunacy Act, 1890. It is to make its own rules as to the conditions under which free British subjects may be "taken charge of" by "nursing homes" or other institutions run for profit, the legal safeguards of the Lunacy Act being meanwhile in abeyance. The House of Commons is asked, by endorsement of this extraordinary principle of the Bill, to "shut its eyes and swallow."

The Memorandum prefixed to the Bill gives us to understand the passing of the Bill is urgent on behalf of all kinds of patients suffering from nervous breakdown. It states that the law, as it now stands, prevents residential treatment of such cases unless they are certified as insane and sent to an institution under the Lunacy Acts. But there is no provision in English law which prohibits such cases being treated on medical lines in hospitals or homes so long as the patients are not "certifiable," and so long as compulsory detention is not exercised.

It would be well if the promoters of this Bill would give it clearly to be understood whether detention is included in Section 1 or not, the term "to take charge of" being extremely vague. If detention is not intended why bring in the Bill, since the law, as it stands, allows of treatment in hospitals or homes, provided the patient is not detained. The leading article in the *British Medical Journal* of May 1st is more explicit. It speaks quite unreservedly of curative detention and of the folly of insisting on the patient's freedom, where detention is necessary for cure. That is exactly the point. If detention has become necessary, the patient has become certifiable—i.e., it has become dangerous to leave him free—consequently his liberty must be restricted, and at the same moment, in consequence of the risk of unscrupulous dealings towards one unable to help himself, it is acknowledged on all hands, and has been strictly embodied in the Lunacy Act, 1890, that legal procedure is in this case obligatory, and appeal to judicial intervention necessary.

In the Memorandum prefixed to Mr. Harmsworth's Bill much stress is laid on the "stigma" which attaches to an individual who has been certified. It has even been asserted that if there were no legal procedure, there would be no stigma. This is a fatal confusion of ideas. It is not the provision for strict legal procedure that causes the stigma. It is the fact of the existence of a dangerous condition of mind necessitating detention. This necessity for detention originates the stigma, and not the law. The function of the law is protective, and we run into great danger if we allow detention to be exercised in contravention of the safeguards of the law.

The author of the article in the *British Medical Journal* speaks of a possible amendment to Mr. Harmsworth's Bill, to the effect that a patient may "accept" the treatment. But it does not need a Bill to oblige the patient to "accept." If the patient's mental state is such that he is uncertifiable, he can make the choice for himself without being obliged to do so by a Bill. It is a contradiction in terms to compel a so-called "voluntary" patient to accept treatment in an institution for the insane. The Bill brought in by Earl

Russell on July 22nd, 1914, had this aim. He himself explained at a Medico-Legal meeting on June 30th, 1914, that the patient would have no choice when sent in by a doctor; but the initial detention could not be continued against his will—i.e., in the event of his discovering that he had the right to leave. This would seem an anomalous arrangement. The writer in the *British Medical Journal* sums up his remarks by a suggestion which, he says, commends itself for its simplicity—viz., to adopt the last clause of Section 13 of the Scotch Lunacy Act, 1866, by which any doctor can send anyone to an asylum for six months on his own sole authority.

This measure, much as it may possibly commend itself to many doctors, will scarcely meet with the same unqualified approval from the great majority of British subjects. The writer says that for years the organised body of English alienists and expert opinion on lunacy has been calling for the incorporation of this measure into English law. It remains to be seen whether the public will also call for it. It is maintained that with the march of progress the question of disorder of the mind begins to be "regulated by scientific considerations."[1] This new consideration is, however, still in its extreme infancy. What we require above everything else is that all mental affections should be genuinely taken into account as a branch of medicine. Insanity is not and cannot be checked by the present methods of treatment. It is both unnatural and unscientific to regard mental treatment as a speciality, secluded from the light which might be thrown on it by every other branch of medicine. Mental treatment has often been of the crudest description, and has failed signally in reducing the prevalence of this worst of mortal ills. The reason of this is that its beginnings have been overlooked. The dread of the prison-bars of detention has stood in the way of every early effort at success. The only method by which the painful sense of indignity and utter insecurity can be removed, is to treat the earliest stages differently. We want places where early cases will not be afraid to come of their own accord for treatment—hospitals where prevention and common-sense will come into action much earlier. We want not more detention, but far less. We want free air and sunshine to penetrate into obscure recesses, and all the skill of medical care, therapeutic resource, and the best all-round intelligence to be brought to bear upon the treatment of derangement of our highest faculties, and this at its very earliest stage. How this can best be facilitated I must leave, with your kind permission, to a future occasion.—I am, Sir, yours faithfully,

S. E. WHITE, M.B. Lond.

Upper Montagu-street, W., May 4th, 1915.

THE MANUFACTURE OF SALVARSAN PRODUCTS IN ENGLAND AND FRANCE.

To the Editor of THE LANCET.

SIR,—I have read in your issue of last week Dr. David Watson's criticisms on my letter of April 3rd, in which he suggests that my diagnosis of arsenical poisoning following an injection of novarsenobenzol "Billon" was incorrect, and that the symptoms might have been "partly or entirely" due to "a mercurial dermatitis." I can only say that it is unprecedented for a case of mercurial dermatitis to persist for nearly four months, and notwithstanding treatment to still show symptoms of that condition; the patient referred to is still in hospital, and the skin over his whole trunk and lower limbs is at the present moment of a brick-red colour and is covered with branny desquamation. If this is Dr. Watson's experience of mercurial dermatitis I am happy to say that that condition is not met with in this metropolis.

In his apologia for Burroughs and Wellcome's preparation kharsivan Dr. Watson states that he has produced sufficient evidence to warrant the conclusion that a dose of 0·6 grm. of that substance is inadvisable; but that firm, in one of their leaflets with which the medical profession is not altogether unfamiliar, states that "kharsivan is to be used in precisely the same manner and dosage as the German product." Dr. Watson further states "that salvarsan is not less toxic than kharsivan in similar dosage is proved by our records," and therefore I presume there is nothing more to be said, though I have given some thousands of injections of salvarsan without having met with any such untoward symptoms as those described in your issues of April 3rd and May 1st.

It is perhaps somewhat *mal à propos* that immediately preceding Dr. Watson's letter in THE LANCET last week there appears my communication of two further cases of arsenical poisoning following injections of kharsivan, one of which unhappily proved fatal. Possibly Dr. Watson will be able to explain this case to his own satisfaction, but the position is this: a healthy young man contracts syphilis; he is given two intravenous injections of kharsivan; he develops symptoms of arsenical poisoning from which he dies one month later, and as to the diagnosis of death there can, unfortunately, be no mistake.

I am, Sir, yours faithfully,

J. ERNEST LANE,
Surgeon to the London Lock Hospital.

Queen Anne-street, W., May 2nd, 1915.

[1] See article in Times.

CLINICAL RESULTS OF KHARSIVAN, BILLON, AND NEOKHARSIVAN.

To the Editor of THE LANCET.

SIR,—The following results of the injection of these drugs may be of interest at the present moment.

Kharsivan.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
78 (25 with no previous arsenical treatment): Primary 2, secondary 50, late secondary 24, tertiary 2.	10%	5%	12·5%; maximum 100·8° F. No temperature in 7 cases with our own re-distilled water.	Nil, except 1 case of bronchial pain lasting 2 days.

Kharsivan is an arsenical preparation made by Messrs. Burroughs, Wellcome, and Co., having a formula exactly similar to salvarsan ("606")—$C_{12}H_{12}O_2N_2As_2(HCl)_2 2H_2O$. It is a yellow acid powder dissolving with some difficulty in water and rather darker than "606." To prepare the drug for intravenous injection 250 c.c. of 0·5 per cent. saline solution made with doubly distilled water and a 15 per cent. solution of caustic sodium hydroxide are required.

According to directions 30 c.c. of doubly distilled water were put in a narrow graduated stoppered flask, to this the powder was added, and the whole

shaken vigorously until the powder dissolved (latterly saline was used and the powder dissolved in it equally well). Caustic sodium hydroxide solution 15 per cent. was then added, until the precipitate first found cleared. Sterile saline solution was next added up to 250 c.c.; the solution often became cloudy on adding the saline, and then caustic sodium hydroxide was added drop by drop until after vigorous shaking the solution remained clear. The quantity of 15 per cent. solution needed varied considerably, 14 minims being the least used, 34 minims the most, for a 0·4 gramme dose. In all cases the solution was tested with litmus paper, and never gave more than a faintly alkaline reaction. The solution was always given cold and intravenously, and in no case was a vein cut down upon.

In every case saline or distilled water was run in before and after the kharsivan. The addition of saline to run in after the injection caused the last part of the solution to become cloudy. Distilled water had not this effect to the same extent. In seven cases our own doubly distilled water was used with *no* after-effects at all. The dosage given never exceeded 0·45 gramme. In a large majority the dose was 0·4 gramme. All the patients were females.

Billon.

This drug was first prepared by one of us with unsatisfactory distilled water, in that the still was old and useless, and it was found that the water was seldom doubly distilled.

Billon with Unsatisfactory Water.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
19 (secondary 15, late secondary 4).	36·8%	15·7%	52%. Maximum 103° F.	Rigors 15·7%

In the three patients who suffered from rigors these occurred ½ hour, 1½ hours, and 5 hours after injection. In two of the cases too large a dose was given—viz., 0·6 gramme to children of 15 years.

Billon with Satisfactory Water.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
31 (primary, 12, secondary 12, tertiary 7).	6·4%	3%	Nil.	Nil.

Of the 26 cases given at the Lock Hospital (18 secondary and 8 late secondary), 10 had had no previous arsenical treatment.

Novarsenobenzol "Billon" is the dioxydiamidoarsénobenzol (monométhylène) sulfoxylate de soude—viz., "914." It is of French preparation, the manufacturers being Poulenc Frères. It consists of a yellow powder, darker and more yellow than the original "914," very soluble in water, forming a perfectly clear yellow solution. To prepare the powder for use it was dissolved in 20 to 30 c.c. of doubly distilled water and given intravenously, a small quantity of the water being introduced before and after the drug. The dosage given was from 0·45 gramme to 0·6 gramme, the patients being both male and female. One of us gave 24 injections of "Billon" to private cases, mostly male patients, who received 0·6 gramme, but one female patient with the same dose vomited and suffered from headache; she had no temperature. She was suffering from two alveolar abscesses at the time. The others had no after-symptoms whatever. All had had no previous arsenical treatment.

Neokharsivan.

No. of cases.	Headache.	Vomiting.	Temperature.	Other ill-effects.
36 (10 had had no previous arsenical treatment): Primary 3, secondary 21, late secondary 12.	14%	2·6% (1 case).	2·6% (1 case—i.e., 1 case of 102·4°).	Rigor occurred in the 1 temperature case.

In the one case of rigor, pyrexia, and vomiting, the rise in temperature occurred about four hours after injection. The patient was perfectly well 24 hours later. There was no reaction with a previous and a later dose of kharsivan.

Neokharsivan is prepared by Burroughs, Wellcome, and Co., and is declared to be identical in essential particulars with "914." It is a yellow powder, a little darker than "914," very easily soluble in water, yielding a clear solution. For intravenous injection the powder was dissolved in from 30 to 60 c.c. of doubly distilled water, doubly distilled water being introduced before and after the drug. The dose given ranged from 0·45 to 0·6 gramme.

General remarks.—The intervals between the injections varied in different cases from one to five weeks, there being two routine treatments used: (*a*) at intervals of seven to ten days, (*b*) at intervals of one month, all patients receiving full doses of mercury.

The hospital patients had the following preparation:—Pil col. cum hyosc., 4 grs., at 6 P.M.; mist. alb. at 2 A.M.; en. sap. at 5 A.M.; glass of hot milk at 10 A.M., and nothing more for four hours before injection. These patients remained in bed until the afternoon of the following day and took no solid food for about 24 hours after injection. The preparations were always given cold and as soon after mixing as possible, the bottle being kept well stoppered and tightly corked until the drug was used. Ether was rubbed over the vein before the insertion of the needle.

An aperient was administered to private patients on the preceding day, no breakfast, but a cup of tea and a piece of toast at 8 A.M., the injection being given at 10 A.M.; this was followed immediately by an ordinary breakfast, after which the patient remained in bed from two to six hours only.

Results.—The results of these three drugs were entirely satisfactory when we were using doubly-distilled water of assured purity. All the patients (164) were improved in health and increased in weight. The disappearance of symptoms seemed to be much the same as in Ehrlich's last preparations. Some cases which had failed to respond to mercury responded readily to arsenic. This was very noticeable in three cases of iritis. Four of the patients were suckling and the babies suffered no ill-effects. No local disturbance was noticed in the vein of the arm. All were perfectly well 48 hours after the injections and to the present date. The Wassermann results in private cases were negative. The urine was free from albumin except in one case—slight for two days only.

Headache is the only symptom which is more marked in these drugs than in Ehrlich's preparations, notably in female patients; in the male patients it very seldom occurred. The severity of

the preparation and the starvation after the injections may be the causes of this headache in the hospital (female) cases.

Vomiting and temperature are at a minimum with pure water; only one rigor occurred in all the injections with pure water. We are convinced that the high percentage of temperatures in kharsivan injections is due entirely to the use of unsatisfactorily distilled water.

Dosage.—The general dosage used was 0·4 gramme kharsivan and 0·45 to 0·6 gramme of billon and neokharsivan. It will be understood that this moderate dosage was employed because we were dealing with new and untried drugs.

In conclusion, it must be noted that these results, although satisfactory, would have been even better if all the water used had been of assured purity. Granted that the distilled water is satisfactory, with a good technique and appropriate dosage we are persuaded that the British and French chemists have overcome the main difficulties and have produced drugs of equal utility to those of our more "cultured" enemy.

We are, Sir, yours faithfully,

CHARLES GIBBS, F.R.C.S. Eng.,
Surgeon to London Lock Hospital and to Charing Cross Hospital.

MORNA RAWLINS,
House Surgeon to London Lock Hospital.

May 1st, 1915.

ENTERIC FEVER DUE TO A URINARY CARRIER OF LONG STANDING.

To the Editor of THE LANCET.

SIR,—The following small outbreak of enteric fever, due to a carrier, appears to me to be of sufficient interest to place on record. It occurred last autumn at the Alexandra Palace while that building was being used for the reception of Belgian refugees. Between the commencement of October and the end of November five members of the staff developed this disease. The first to fall ill was a clerk working in the trustees' office, the second was a waiter in the staff dining-room, the third waited on the better-class refugees, the fourth on the general body of refugees, while the fifth and last was the night nurse on duty in the hospital ward where there had been no case of enteric fever for six weeks. These five individuals, consequently, were all working in different parts of the building. They had only one thing in common, and that was the preparation of their food by the cook who was in charge of the staff kitchen. On being questioned this man stated that he had suffered from enteric fever 18 years ago, and was in St. Mary's Hospital for six months. I obtained specimens of his excreta, which were bacteriologically examined for me by Dr. G. E. Cartwright Wood, who reported that the bacillus typhosus was present in the urine but was not found in the fæces. In answer to my inquiries, the man informed me that he had never at any time suffered from pain or discomfort in the region of the bladder, nor from frequency of micturition; nor had he ever noticed anything unusual in the appearance of his urine. I was not able to make any inquiries of previous employers of this man because for the last 16 years he has had no fixed employment, but has moved about the country acting as temporary cook at race meetings, during manœuvres, and at hotels.

The points of interest in this case are: (1) The long duration of infection in a urinary carrier; (2) the complete absence of bladder symptoms. After the cook's departure no further case of enteric occurred among the staff. I might add that there were only six cases of this disease among the 32,000 refugees who passed through the Alexandra Palace.

I am, Sir, yours faithfully,

HERBERT E. CUFF,
Principal Medical Officer of the Metropolitan Asylums Board.

April 30th, 1915.

THE SCOTOMA OF MIGRAINE.

To the Editor of THE LANCET.

SIR,—Mr. Charles Higgens's observations in THE LANCET of May 1st are of great importance. A simple experiment which proves conclusively that the photo-chemical stimulus is external to the cones may be made as follows. On arising in the morning arrange a mirror so that the sun is reflected from its surface, then whilst one eye is closed and covered with the hand the other eye is opened and closed so that the image of the sun is visible for a fraction of a second; both eyes being now closed and covered with the hands a clear-cut after-image of the sun is seen on a dark background. It will be noticed that there is nothing else visible in the field of vision. If the head be now moved rather sharply to one side the after-image will be drawn out into a long sausage-shaped form with irregular knobs on it. If the head be sharply jerked we can obtain several after-images, plainly showing that the photo-chemical stimulus is movable in the retina and therefore cannot be situated in the cones. I find these experiments succeed best in the morning immediately after sleep, probably because the processes of the pigment cells are retracted. If any reader find that he cannot see any of the subjective phenomena described by me I would suggest that he select one of the most accurate observers of his acquaintance and ask him to repeat the experiment without giving him the least clue as to what he is to see. If he describe the phenomenon as I have described it, it is obvious that we have obtained important confirmatory evidence. I find that whilst many older men fail to see various subjective phenomena they are rarely missed by the young.

I am, Sir, yours faithfully,

London, May 1st, 1915. F. W. EDRIDGE-GREEN.

THE BACTERIAL INFECTIONS OF PROJECTILE WOUNDS.

To the Editor of THE LANCET.

SIR,—In the leading article under the above title in your issue of April 24th, as well as in the illuminating address of Sir Almroth Wright and the "Memorandum on the Treatment of the Bacterial Infections of Projectile Wounds" in the same issue, stress is laid on the importance of free drainage of these wounds and of the necessity of securing "a free outflow of lymph"—and Sir Almroth Wright and the other writers mention the various means adopted to secure these ends. But I see that there is no mention of the use of "Bier's method" of evacuating abscesses and sinuses by means of cupping glasses and other forms of aspiration.

Are there not cases where this method would be useful—especially when two or three days have elapsed after the injury? By suction or aspiration pent-up matter is evacuated and "a free flow of lymph" and an "active hyperæmia" are induced.

I am, Sir, yours faithfully,

Llandrindod Wells, April 29th, 1915 R. ACKERLEY.

THE TREATMENT OF CALLOUS ULCERS.

To the Editor of THE LANCET.

SIR,—Mr. H. Beckwith Whitehouse, in his report on gunshot and shell wounds in THE LANCET of April 24th, speaks of the use of glucose in causing osmosis and promoting rapid healing. Strangely enough, for many years I have used cane sugar in medium-sized crystals to soften callous ulcers on account of the free passage of lymph over the surface of the ulcer when the crystals are dusted over it. This is a wrinkle that I picked up from an old woman who was curing an ulcer on her leg in this manner. How or where she got the idea I never learned, and I never saw anyone but herself use it.

Progressive gangrene with a tough yellow slough continually increasing in depth and thickness may possibly, as far as I know, be found in some wounded in this war. A case that came under my care in civil life caused me great worry and anxiety. All I could do was unavailing, until I allowed steam direct from a kettle-spout to play on the slough; this rendered it friable, and I was able to clear it away down to the raw, living flesh, the blood-vessels and nerves which were dead remaining as strings hanging from the surface. Rapid healing followed the use of antiseptic dressings.

I am, Sir, yours faithfully,

Bradford, Yorks, April 27th, 1915. P. M. O'BRIEN.

TREATMENT OF "INCRUSTED CYSTITIS" BY SUPRAPUBIC DRAIN AND INTRA-VESICAL INJECTION OF LACTIC BACILLUS.

To the Editor of THE LANCET.

SIR,—I agree with Dr. David Newman, in your issue of May 1st, that Dr. Caulk cannot claim priority in regard to the action of the lactic acid bacillus on other infections. I fancy the credit should belong to Metchnikoff, for surely he first demonstrated scientifically the effect of this bacillus on bacilli coli. I have myself for some years used *lactic acid* for infections of the bladder. I first used it in two cases with dense phosphatic incrustations and was delighted with the result. Subsequently I had experiments made as to the bactericidal potency of solutions of different strengths in respect to bacilli coli, and we found that a solution of 1–10 was the minimum strength that was likely to be effectual. I also had tested the solvent power of this acid on vesical calculi. It was found that in the strength of 1–10 it is a weak solvent, but is able to dissolve small phosphatic spicules within a reasonable time and to soften and so assist the disintegration of larger masses. Unfortunately, illness and other circumstances prevented the publication of these observations, but I hope to record them some day.

Meanwhile I would advise the use of a 10 per cent. solution of lactic acid rather than the lactic acid bacillus for two reasons: (1) lactic acid must be in a fairly strong solution if it is to act as a solvent as well as a preventive of phosphatic deposits; (2) the stronger the solution the greater the bactericidal potency. It will be found that lactic acid in the strength recommended causes considerable pain when injected into the bladder, but if a weak solution of novocaine be first injected into the bladder and allowed to remain there for a few minutes the pain is prevented. The solution of lactic acid should be injected into the empty bladder and left there for 15 minutes. It should then be washed out with saline. These procedures should be repeated as often as is considered necessary. In bad cases suprapubic (*not* vaginal) drainage should be employed.

I may add that I have used lactic acid in the same strength for intractable leucorrhœa due to bacillus coli infection. Some years ago I showed that the lactic acid normally found in the vagina is not necessarily produced by the action of Döderlein's bacillus since this acid is present in sterile hæmatocolpos fluid.[1]

I am, Sir, yours faithfully,

Liverpool, May 3rd, 1915. W. BLAIR BELL.

CERTAIN PECULIAR CRYSTALS FOUND IN CEREBRO-SPINAL FLUID.

To the Editor of THE LANCET.

SIR,—I have read with interest the article of Dr. W. W. D. Thomson in THE LANCET of March 27th on the occurrence of peculiar crystals in the cerebro-spinal fluid for the reason that shortly before the outbreak of war I encountered a similar case myself. From the clinical side the case was very obscure. The only outstanding feature was very marked secondary optic atrophy, together with a slight degree of headache. There were no other symptoms of cerebral tumour, and, apart from a slight degree of anæmia, the patient appeared to be in perfect health. The Wassermann reaction was negative. The cerebro-spinal fluid was perfectly clear, under slightly increased pressure, showed no cellular or protein increase, but contained enormous numbers of crystals, which appeared to be identical in appearance with those described and figured by Dr. Thomson. They refused to take up any stain. It was impossible to determine the nature of these crystals until they were put under the polarising microscope, when they were at once seen to be the highly, doubly refracting crystals of a cholesterin ester. No crystals of cholesterin could be seen. The crystals were present in the cerebro-spinal fluid on four separate occasions. If Dr. Thomson should be fortunate enough to come across another case of this description he might find it of interest to examine the fluid with the polarising microscope and compare the crystals with a known specimen of a cholesterin ester.

Mr. Ernest H. Shaw's suggestion that the crystals were deposited from the water used for sterilising the tube appears to me a most extraordinary one, and I am glad to see that Dr. Thomson has completely refuted it.

I am, Sir, yours faithfully,

WILLIAM BOYD,
Lieutenant R.A.M.C.(T.); Professor of Pathology, University of Winnipeg.
1/3rd North Midland Field Ambulance, British Expeditionary Force, May 1st, 1915.

THE WAR OFFICE NEED FOR DOCTORS.

To the Editor of THE LANCET.

SIR,—Many of us middle-aged men would be willing to join the Royal Army Medical Corps, but at our age we have a strong objection to being

[1] Proceedings of the Royal Society of Medicine (Obstetrical and Gynæcological Section), 1911, vol. iv., p. 234; and Journal of Obstetrics and Gynæcology of the British Empire, 1912, vol. xxi., p. 209, THE LANCET, May 13th, 1911.

under the orders of a captain aged 28 or so. I know it is impossible for the War Office to explain to each individually as to the nature of the duties expected of us, but it would be very helpful to some of us who are wavering if the authorities were to publish a general description of the kind of man they want, what his duties would be, and what would be the nature of the discipline which he would have to submit to.

I am, Sir, yours faithfully,

May 1st, 1915. "52."

Obituary.

ALEXANDER MAXWELL ADAMS, F.R.C.S. EDIN., L.R.C.P. EDIN., L.F.P.S. GLASG.,

SURGEON-COLONEL (RETIRED), 3RD AND 4TH BATTALIONS SCOTTISH RIFLES; MEDICAL OFFICER OF HEALTH OF LANARK.

THE death of Surgeon-Colonel Alexander Maxwell Adams took place, after a somewhat long illness, at Friarsfield, Lanark, on April 9th.

Alexander Maxwell Adams, who was the son of Alexander Maxwell Adams, M.D., professor of medicine at Anderson's University, Glasgow, was born at Berwick on March 30th, 1837, and qualified L.F.P.S. Glasg. in 1857. He became L.R.C.P. Edin. in 1860, F.R.C.S. Edin. in 1875, and D.P.H. in 1890. He was Surgeon-Lieutenant-Colonel of the 3rd and 4th Battalions Scottish Rifles and served in the South African campaign. He was medical officer to the Lady Hozier Convalescent Home and the Smyllum Orphanage, surgeon to the Lanark Poorhouse and to the Lockhart Hospital, and medical officer of health of Lanark.

His all-round professional capacity made him an outstanding practitioner in the district in which he lived; he enjoyed for many years one of the largest practices in the neighbourhood, and his kindly manner gained him immediate acceptance among those who called upon him for aid. He was the first medical officer of health of the borough of Lanark, and held the position for 30 years. His term of office was marked by great sanitary reform, and he lived to see a decided improvement in the health of the district occasioned by his exertions. He was a member of the Lanark school board from 1885 to 1903, and served the office of chairman for two periods, from 1889 to 1891 and again from 1894 to 1903.

Dr. Adams leaves a wife and large family to mourn their loss, one son, Dr. D. A. V. Maxwell Adams, at present in the Royal Army Medical Corps, being with the British Expeditionary Force in France.

FREDERICK LAWRANCE, M.R.C.S., L.S.A.

Mr. Frederick Lawrance, who died in his eighty-fifth year on May 1st, was perhaps the oldest practising medical man. The son of the Rev. Robert Lawrance, rector for 21 years at Bleadon, near Weston-super-Mare, he was born at Kington St. Michael, near Chippenham. He received his medical education at St. Bartholomew's Hospital, qualified as M.R.C.S. in 1857 and L.S.A. in 1859, and became a partner of Dr. Loadman, of Hammersmith, going to reside in a house in Chiswick-lane, in which the poet Pope and his parents had at one time lived.

Mr. Lawrance was widely known, and at one time his practice was among all classes. He always enjoyed good health until about a year and a half ago, but he continued to practise almost until the day of his death, attending his last case of midwifery this year. His energy was such that he continued in active practice until he went into a nursing home two months ago for an operation, from which he made a good recovery. Indeed, he insisted upon giving directions about his patients to within three or four days of his death, notwithstanding the impairment of his speech due to the partial hemiplegia of which he had two strokes during the last month.

His activities were numerous and varied. He was chairman of the Conservative Association of Hammersmith, member of the board of management of the West London Hospital, a churchwarden, and was associated with very many local charitable and other institutions. He was also an ex-president, an original member, and one of the most regular attendants of the West London Medico-Chirurgical Society. Mr. Lawrance was initiated into Freemasonry in the Lodge of Harmony, and was a founder member of several Lodges and Chapters. He was a director of ceremonies at the Grand Lodge of England for the year during which King Edward VII., when Prince of Wales, was installed Grand Master. He was fond of all kinds of sport, and of riding and driving, was a good judge of a horse and in his younger days enjoyed fishing, shooting, and hunting. One of the most unselfish of men, he endeared himself to several generations of families that he had attended.

Mr. Lawrance married Miss Matilda Clark, youngest daughter of the late Dr. Clark, of Twickenhan, by whom he had one child, a daughter. Both predeceased him by some years.

THE LATE DR. PANTLAND HICK.

A further appreciation has reached us of Dr. Pantland Hick, whose untimely death has left so deep an impression on his friends:—

"Life is short, and the Art long ....." Men must strive to achieve even though they live not to see the fruits of their endeavours and achievements. Thus did Hippocrates in his wisdom inscribe the epitaph of the many physicians, cut off in the vigour of youth, who were to follow him with devotion and faith through the long ages. Pantland Hick was such a man. He was absorbed in his work; he spared neither his energies nor his health. Indeed, he died serving his country with that same unselfishness that he lavished on his friends and patients in their hours of need. In these times memory is short and hopes are high. Men whose death would cause a stir in ordinary times pass almost unnoticed. But to those who knew him Hick will always be a living memory—the memory of a physician whose powers of observation and whose frank and noble disposition would have placed him among the great physicians of the country had he been spared to accomplish in his own modest but unswerving way that to which he had set his hand.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The next quarterly (or general) meeting of this association will take place on Tuesday, May 18th, at 11, Chandos-street, Cavendish-square, London, W., under the presidency of Dr. David G. Thomson, at 3 P.M. On the same day and at the same place will meet: Nominations committee, at 10 A.M.; educational committee, at 11 A.M.; Parliamentary committee, at 12 noon; council, at 1.30 P.M.; and research committee, at 5.15 P.M. Papers will be read by Dr. T. B. Hyslop on Anger, and by Dr. David Orr on Research.

THE BELGIAN DOCTORS' AND PHARMACISTS' RELIEF FUND.

THE EXECUTIVE COMMITTEE.

A MEETING of the Executive Committee was held on Thursday, April 29th, when good progress was reported. A letter was read from Dr. Pechère, the President of the Aide et Protection aux Médecins et Pharmaciens Belges, to Sir Rickman Godlee, in which the warmest thanks of that body were returned to the Fund for the donation in money which had been forwarded upon the decision of the committee at the previous meeting. To this letter a reply was sent by Sir Rickman Godlee stating the intention of the Fund to continue to help in this way, and asking that details of the distribution should be made known to the committee of the Fund. Sir Rickman Godlee also read a letter from Mr. Herbert Hoover, saying that for the moment it would not be possible to communicate with Belgium or to receive from Belgium the information sought.

A letter was also read from the Under Secretary of State for Foreign Affairs explaining the circumstances in which His Majesty's Government decided that they would not be able to make a monthly contribution out of public funds to the benevolent department of the American Commission for Relief in Belgium. It was decided that a copy of this letter should be sent to the chairman of one of the American Funds having similar objects to those of the British Fund, because the position of the British Government in the matter might be misinterpreted in the United States.

Dr. Des Vœux and Dr. Squire Sprigge said that their experiences were alike at the present moment with regard to finding situations for Belgian doctors in this country. At one time there appeared to be little difficulty in finding the posts, while the applicants were not coming forward. Now there seemed to be many vacant appointments, but for one reason or another the Belgian candidates were not successful in obtaining them.

The treasurer's report showed that money was coming in steadily, though many districts had not yet responded to the invitation to subscribe. Dr. Alfred Cox said that in the forthcoming annual report of the British Medical Association the claims of the Fund would be repeated. It was generally felt by the committee that though the outgoings at the time were not large, the call upon the Fund in the future would be very heavy, and that no pains ought to be spared to augment its resources.

Messrs. Burch, Whitehead, and Davidsons, 29, Spring-gardens, London, S.W., have kindly consented to act as honorary solicitors to the Fund.

THE WEEK'S SUBSCRIPTIONS.

The subscriptions received by Dr. Des Vœux during the week ending Tuesday last make a total of very nearly £2000, but this handsome sum, of course, includes a donation, on account, from the Scottish Committee, Belgian Doctors' and Pharmacists' Relief Fund, of £1000. From the Liverpool Belgian Doctors' Relief Fund there was received £400, the sum being earmarked for the relief of doctors, as a separate fund has been instituted in Liverpool for pharmacists. A further welcome donation of £400 was received through the Australian Agent-General from the Australasian Pharmaceutical Conference.

	£	s.	d.
Mr. F. Godlee	10	0	0
Liverpool Belgian Doctors' Relief Fund (subscribed entirely by Doctors)...	400	0	0
Warrington Division, B.M.A. (per Dr. J. A. Murray, Hon. Sec.) ...	16	0	0
Birmingham Local Committee (per Dr. R. Saundby) (seventeenth donation, total £387 17*s.* 3*d.*)—			
Dr. and Mrs. Stonehewer (proceeds of Whist Party)	10	5	0
Dr. G. D. H. Carpenter	1	0	0
Dr. Barrs (Leeds) collected by—			
Dr. Hawkyard	3	3	0
Mr. F. H. Mayo	2	2	0
Furness Division, B.M.A. (per Drs. Alexander and Thompson, Hon. Secs.)—			
Dr. Cook	2	2	0
Dr. Mallagh	1	1	0
Dr. Fawcett	1	1	0
Dr. Lowther...	1	0	0
Dr. Gwatkin...	1	1	0
Dr. Collins	5	5	0
Dr. Harper	1	1	0
Dr. Daniel	1	1	0
Dr. Livingston	1	1	0
Dr. Wilson	1	1	0
Dr. Bowman...	5	5	0
Dr. Brown	0	10	6
Dr. J. A. Reed	3	3	0
Dr. Carmichael	1	1	0
Dr. Ashburner	3	3	0
Dr. Kendal	0	10	6
Dr. Alexander	1	1	0
Dr. Johnston	1	1	0
Dr. Blacklee	1	1	0
Dr. Cross	1	1	0
Dr. Forster	1	1	0
Dr. Stoney	0	10	0
Dr. Ware	1	1	0
Dr. Menzies	1	1	0
Dr. Hawkesworth ...	1	1	0
Dr. Sinclair	1	1	0
Dr. Pratt	1	1	0
Dr. Sansom and Dr. Bayne...	2	2	0
Dr. Magill	0	10	0
Dr. Thompson	1	1	0
Scottish Committee Belgian Doctors' and Pharmacists' Relief Fund (per Dr. Norman Walker, Treasurer, Royal College of Physicians of Scotland) 1000	0	0	
Dr. G. Lestock Thornton, recruiting fees, &c. (second donation, total £3 3*s.*)	2	2	0
Bucks Division, B.M.A. (per Dr. A. E. Larking)—			
Dr. Johnstone Harris	1	1	0
Dr. Lysander Maybury	1	1	0
East Sussex Medico-Chirurgical Society (per Dr. F. W. S. Culhane, Hon. Treas.)	30	0	0
North of England Branch of Belgian Doctors' and Pharmacists' Relief Fund (per Dr. James Don and Mr. A. S. Perceval, Hon. Secs.), ninth donation, total £349 19*s.*)—			
Dr. T. A. B. Kane ...	3	3	0
Dr. A. Wilkinson ...	1	1	0
Dr. W. J. Baty	3	3	0
Dr. J. R. Burn	1	1	0
Dr. James McConnell.	1	1	0
Australasian Pharmaceutical Conference (per the Agent-General)—			
Victoria	300	0	0
Queensland	65	0	0
Tasmania	35	0	0
Mr. P. L. Ridge	0	5	8
Northants Pharmacists' Association (per Mr. R. H. Robinson)... ...	2	2	0
Mr. T. H. Powell	0	5	0
Wimbledon and District Pharmacists' Association (per Mr. F. T. Bowen)	2	2	0
Mr. J. W. Venters	0	5	0
Mr. F. A. Williamson (proceeds from weighing machine)	0	7	3
Mr. A. Chapman	0	11	7
Mr. R. Fouracre	0	5	0
Dr. A. W. Sanders... ...	1	0	0

Subscriptions to the Fund should be sent to the treasurer of the Fund, Dr. H. A. Des Vœux, at 14, Buckingham-gate, London, S.W., and should be made payable to the Belgian Doctors' and Pharmacists' Relief Fund, crossed Lloyds Bank, Ltd.

THE APPEAL FOR SURGICAL INSTRUMENTS.

The Master of the Society of Apothecaries begs to acknowledge the receipt of surgical instruments kindly contributed by the following donors:—

Dr. Flora Butcher, Tanakpur, U.P., India; Dr. J. C. Eames, Stoneclough, Manchester; Dr. W. H. Hargreaves, Dr. R. G. S. Orbell, Dr. J. Whitton, and Dr. Scott (per Mr. W. H. Rose, chairman, Oamaru Hospital, New Zealand).

DONATIONS AND BEQUESTS.—By the will of the late Dr. Arthur Wigelsworth Orwin the Central London Throat Hospital will receive £1000.—The late Alderman John Royle, of Manchester, bequeathed £1000 each to the Ancoats Hospital, Manchester, Henshaw's Blind Asylum, Old Trafford, and the Manchester Royal Infirmary. Subject to certain gifts of shares, the testator left the residue of his property as to three-fifths to the "David Lewis Epileptic Colony," Sandle Bridge, Cheshire, and as to two-fifths as his trustees may see fit among charities mentioned in his will.—King Edward's Hospital Fund will receive £60,000 under the will of the late Mr. Edward Berman, in the event of certain legacies and a life-interest failing.—A sum of £250, part of the fund placed at the disposal of the Queen by the wives of Freemasons, has been given by Her Majesty to pay for the training and expenses of a medical student at the London School of Medicine for Women.—Sir Joseph Jonas, chairman of the Applied Science Committee of the University of Sheffield, has given £5000 to found, endow, and equip a testing laboratory in connexion with the Applied Science Department of the University.

The War.

THE CASUALTY LIST.

THE casualty lists published since our last issue contain the following names of medical officers:—

Killed: Fleet-Surgeon Adrian A. Forrester, R.N.

Wounded: Captain J. L. Duval, Captain R. H. McGibbon (both of 1st Field Ambulance, Canadian Forces), Captain C. A. Wood (attached to 1st Battalion, 4th Gurkha Rifles), I.M.S.; Lieutenant H. S. de Boer, Lieutenant G. L. K. Findlay, Lieutenant J. A. MacMahon (attached to 1st Battalion, Somerset Light Infantry), all of the R.A.M.C.; Major W. M. Mackay, Major F. G. Proudfoot, Captain J. M. Bowie, Captain D. H. Weir, Lieutenant R. E. Barnsley, Lieutenant V. H. Wardle, all of the R.A.M.C. (T.F.).

Missing: Lieutenant C. Stenhouse, R.A.M.C. (T.F.).

THE HONOURS LIST.

The Indian Distinguished Service Medal, in recognition of their gallantry and devotion to duty whilst serving with the Indian Army Corps, British Expeditionary Force, has been conferred on the following native medical officers: First-class Senior Sub-Assistant Surgeon Gaurie Shankar (112th Indian Field Ambulance) and Third-class Sub-Assistant Surgeon Zafar Husain (129th Indian Field Ambulance).

WHAT ANTITYPHOID INOCULATION HAS DONE FOR THE ARMY.

In our parliamentary columns will be found a statement by Mr. Tennant of the number of cases of typhoid fever that have occurred in the Expeditionary Force from the outbreak of the war to the beginning of May, which shows that the case-mortality among those protected was between 6 and 7 per cent., while among those unprotected it amounted to over 20 per cent. We cannot, of course, in the absence of a statement as to what proportion of the entire army was fully protected, what partly protected, and what entirely unprotected, draw indisputable conclusions as to the immunity conferred in regard to case incidence, but seeing that the environment and other modifying conditions, so far as these several classes were concerned, must have been practically identical, it is obvious that the effect on the mortality of the disease was very great indeed. Sir Berkeley Moynihan, speaking recently to a professional audience at Leeds from his own observations at the front, expressed the conviction, based on his own experience, that antityphoid inoculation had clearly reduced the incidence of typhoid fever, mitigated its severity, and, above all, considerably diminished its mortality.

THE GERMAN USE OF ASPHYXIATING GASES.

Under date of May 4th Sir John French has issued the following report on the use of asphyxiating gases in warfare and on deadly and cruel effects upon those exposed to them:—

The gases employed have been ejected from pipes laid into the trenches, and also produced by the explosion of shells especially manufactured for the purpose. The German troops who attacked under cover of these gases were provided with specially designed respirators, which were issued in sealed pattern covers. This all points to long and methodical preparation on a large scale.

A week before the Germans first used this method they announced in their official communiqué that we were making use of asphyxiating gases. At the time there appeared to be no reason for this astounding falsehood, but now, of course, it is obvious that it was part of the scheme. It is a further proof of the deliberate nature of the introduction by the Germans of a new and illegal weapon, and shows that they recognised its illegality and were anxious to forestall neutral, and possibly domestic, criticism.

Since the enemy first made use of this method of covering his advance with a cloud of poisoned air he has repeated it both in offence and defence whenever the wind has been favourable.

The effect of this poison is not merely disabling or even painlessly fatal, as suggested in the German press. Those of its victims who do not succumb on the field and can be brought into hospital suffer acutely, and in a large proportion of cases die a painful and lingering death. Those who survive are in little better case, as the injury to their lungs appears to be of a permanent character and reduces them to a condition which points to their being invalids for life. These effects must be well known to the German scientists who devised this new weapon and to the military authorities who have sanctioned its use.

I am of the opinion that the enemy has definitely decided to use these gases as a normal procedure and that protests will be useless.

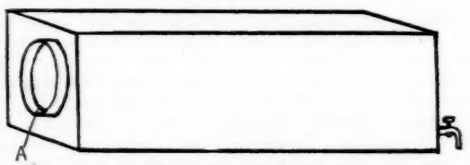
CONTINUOUS BATHS FOR SEPTIC WOUNDS OF THE LEG.

Mr. Malcolm Donaldson, F.R.C.S. Eng., Temporary Lieutenant, R.A.M.C., has sent us the following description of the apparatus which he has designed for the treatment by continuous baths of septic wounds of the leg:—

"In looking through the medical journals for the last few months it at once becomes obvious what a variety of opinion there is concerning the treatment of the intensely septic wounds of the leg which are a feature of the present war. Such controversies tend to show that up to the present no royal road to cure has been found.

The base hospital to which I am attached is the furthest from the front; consequently some of the casualties arrive with wounds in a state of sepsis; therefore it may be of interest to mention the treatment which, in my limited experience, has proved most beneficial, and to describe a leg-bath which can be used with the patient in the horizontal position, without the water finding 'its own level' in the mattress and bedding.

FIG. 1.

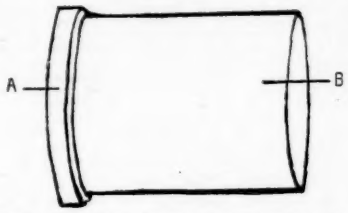


The box bath with collar (A) at one end and tap to permit the flow of water at the other.

It is obviously useless to put a limb in a bath if there is not free drainage. A few hours after the patient is admitted, and when he has recovered from the fatigue of the journey, he is taken to the theatre and the limb thoroughly opened up. Like most people, since the beginning of the war I have been forced to realise more and more that large incisions and multiple counter drains are absolutely essential. A few hours later, when all hæmorrhage has ceased, the limb is put into the bath (described below). At first various antiseptics were tried, but lately, hypertonic solution of salt (from 4 per cent. to 10 per cent.) has been used.

The results of this treatment, especially since the salt solution has been used, are most striking. The limb is left in the bath from 24 to 48 hours, the solution being changed at intervals, and kept at a comfortable temperature. It is then fomented for 12 hours before it is again put in the bath. The relief to the patient is very great, and they often beg to have their legs left in the bath. It is better to increase the strength of the salt slowly, and then the patient

FIG. 2.

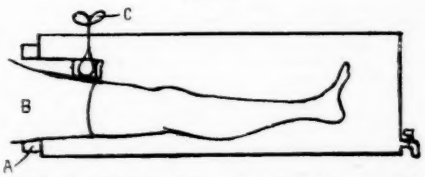


The collar A, and rubber sleeve B, through which the limb is passed. The rubber sleeves can be obtained from Messrs. Cow, Cheapside, London.

does not feel the stinging sensation for more than a few minutes. At the end of 24 hours the leg is often very swollen as the result of the saline, as can be proved by comparing it with other solutions. The patients drink large quantities of fluid during this treatment, and it is found that the discharge from the wound is greatly increased for several hours after removal of the limb from the bath, the sloughs coming away easily.

This bath (Fig. 1) is made of zinc or galvanised iron with the following dimensions: Length, 3 ft.; width, 10 in.; depth, 1 ft.; it has a circular hole at one end 30 in. in circumference. On the outer side is a metal collar or a flange which projects 1½ in. On to this collar a rubber sleeve (Fig. 2) is fitted, the other end of the sleeve being clamped on to the

FIG. 3.



The limb immersed in the bath. The rubber sleeve B, which is attached to the collar A, is drawn taut on the limb by the clamp C, preventing trickling of water from the bath.

thigh after the leg has been introduced into the bath. (Fig. 3.) There is no need for the rubber to be very much stretched, as the pressure of the water helps to keep it watertight. The dimensions of the rubber sleeve are: length, 12 in.; circumference, 26 in.; with a thick band over one end to fit over the collar.

I am much indebted to my engineering friend, Mr. H. Wingfield, for helping me to design the bath."

VACANCIES FOR MEDICAL OFFICERS.—We are asked to state that there are still a few vacancies for medical men wishing to take commissions in the 1st London (City of London) Sanitary Company. As the duties of this company consist in organising and supervising the sanitary work of the army at the front and at home, it is desirable that applicants for commissions in this company should have a knowledge of sanitation. The posts are especially suitable for men in the Public Health or Education Service who can be released by their councils for military work. Those joining at once may expect to be ordered abroad at an early date. Applications for commissions should be made to the Officer Commanding, 1st London (City of London) Sanitary Company, Room B 6, Duke of York's Headquarters, Chelsea, S.W.

MEDICAL RELIEF FOR SERBIA.—The second hospital which was being despatched to Serbia by the British Farmers' Red Cross Fund to combat the spread of typhus fever, as well as the Serbian unit of the Scottish Women's Hospitals, has been temporarily detained at Malta on the requisition of the Governor, its services there being urgently required.

The Wounded Allies Relief Committee have appointed Dr. R. Fleming Jones as head of their Serbian typhus hospital at Kragujevac, where during the month of March there were over a thousand cases of recurrent or enteric typhus. Dr. Jones has had exceptional experience in this kind of work, not only in the Spanish-American War, but also in New Guinea where for the past three years he has been chief medical officer. The Wounded Allies Relief Committee's No. 2 Home for Disabled Belgian Soldiers, 45, Courtfield-gardens, Kensington, which accommodates about 50 men, will be formally opened at 4 P.M. on Monday, May 10th, by Her Imperial Highness Princess Napoleon (Princess Clementine of Belgium).

THE CARE OF THE WOUNDED IN IRELAND.—The hospital ship *Oxfordshire* arrived in Dublin from France on Friday, April 30th, with 13 officers and 826 men wounded in the fighting round Ypres. Of these rather less than half were distributed among the Dublin hospitals, the remainder being sent some to Belfast, some to Cork, and some to various other centres. The patients were for the most part not so gravely wounded as the last party that arrived in Dublin. Those despatched to Belfast travelled by the Great Northern Railway Company's hospital train and were distributed as follows: 22 were sent to the Royal Victoria Hospital (of whom 20 were severe stretcher-cases), 24 were sent to the Mater Infirmorum Hospital, 22 to the Samaritan Hospital, and 53 to the Ulster Volunteer Force Hospital. Of the remainder, 25 were sent to the Waveney Hospital, Ballymena, and 6 to Dumbarton House, Gilford, where a hospital has been established, under the auspices of the Ulster Volunteer Force. Complete arrangements have been made for the reception, comfort, transport, and treatment of the wounded soldiers. On May 1st another draft of 126 sick and wounded soldiers were sent from Dublin (where they disembarked) to the north of Ireland, and were divided among the above hospitals, as well as the county infirmaries at Omagh and Londonderry and at Downpatrick.

ST. MARYLEBONE WAR HOSPITAL SUPPLY DEPÔT.—This depôt, to the establishment of which through the generosity of Mr. James Boyton, M.P., brief reference was made in our issue of May 1st, is now open to inspection at 32, Queen Anne-street, Cavendish-square, W., between 10 A.M. and 6 P.M. It contains rooms allotted severally to the following purposes: Bandages, surgical dressings, splints, pine dressings, needlework, slippers, linen, stock and sorting, and carpenter's work. All the articles are sent out in response to a direct appeal from some hospital abroad that is urgently in need. The weekly subscription of 1s. each contributed by all the voluntary workers covers the running expenses, so that the whole of any donation received passes direct to the purchase of material required for making supplies. Donations of money, also of blankets, socks, rubber hot-water bottles, and old linen, will be gratefully received by the hon. sec., Mr. F. A. Juler, at the above address.

WAR EMERGENCY COURSES FOR CIVIL PRACTITIONERS.—A Glasgow correspondent, who signs himself "Emergency," writes as follows: "In THE LANCET of March 27th and April 3rd there are paragraphs to the effect that the Russian and Italian Governments have requested the medical authorities to give to senior students and practitioners short courses in practical emergency surgery and field hygiene. Is anything being done in this country in this direction? Many civil practitioners will feel uncertain of themselves when faced with work they are unaccustomed to. A short course in the essentials of these subjects would dispel this uncertainty and immensely increase the efficiency and usefulness of these practitioners."

"FLAG DAY" IN BELFAST.—The Belfast Rotary Club is to be congratulated on the phenomenal success of an undertaking originated by them, the object of which was to aid Belfast's wounded sailors and soldiers. All over the city on April 30th ladies were active in selling flags of the Allies in the present war—English, French, Russian, Japanese, Belgian, and Serbian. The nominal price of each flag was 1*d*., but as much as £5 were cheerfully paid. As a result the sum of £2667 2*s*. will be available, and it is to be distributed through "The Soldiers' and Sailors' Help Society." Over £90,000 have already been subscribed in Belfast to special funds in connexion with the war, a sum far beyond that contributed in any other city (or two cities) in Ireland.

A HANDBOOK FOR WAR TIME.—A useful reference book, with the title "All Can Help" and the subtitle of "A Handbook for War Time," has been issued by the Duty and Discipline Movement of 117, Victoria-street, London, S.W., at the price of 6*d*. It was first published in November, 1914, and revised and reprinted in March of this year. Its 95 pages contain a quantity of useful information such as How to Join the Forces, Pay, Separation Allowance, Territorial Forces, Reserve and Volunteer or Voluntary Corps, and a long list of naval, military, and social help agencies and societies, divided into sections of (1) For Sailors and Soldiers of the Allied Nations; (2) Funds for Relief of Civilians suffering through War; (3) Funds and Agencies for Helping Distressed Foreigners. In this last section is included the Belgian Doctors' and Pharmacists' Relief Fund (where, it may be pointed out, the chairman is incorrectly described). There are also special chapters treating generally of the Family in War Time and the War and the Sentimentalists. Another edition would, in our opinion, be improved by a short alphabetical index of the whole contents, although some sections are more or less alphabetical in themselves.

NEWCASTLE SURGICAL AID SOCIETY.—The annual meeting of the Arnison Surgical Aid Society was held at the Royal Infirmary, Newcastle, on April 29th, when the report showed that during the year 1914 assistance had been given to 171 applicants. The amount paid for appliances was £260, towards which the patients had contributed £125. The working men of Newcastle had collected £70. Although the number of appliances supplied to poor people had not been so great in recent as in past years, owing to the work of the Insurance Committee and a School Teachers Fund for supplying spectacles to school children, it was pointed out in the course of the proceedings that during and after the war a large number of soldiers and sailors would apply to the society for aid. For this reason an earnest appeal was made for increased subscriptions.

"TUCKED SHEETS" FOR HOSPITAL USE.—If a sheet is turned it is obvious that it will transfer to the bedding what it should carry to the wash to be removed. Mr. D. H. Shuttleworth-Brown, of Wimbledon, has devised a "tucked sheet," the tuck serving to obviate the possibility of a sheet becoming accidentally turned, and we are informed that its adoption at the King George Hospital and by the Red Cross Society is being supported by high surgical authority.

FLIES IN WARFARE.—Professor R. Newstead, of the Liverpool School of Tropical Medicine, has been commissioned by the War Office to prosecute entomological investigations in France from the standpoint of military sanitation. He accordingly left for France on April 27th.

AN ATHLETIC GROUND FOR THE ROYAL NAVAL DIVISION.—Football and sports grounds at the Crystal Palace have been allocated by the naval authorities for the use of the Royal Naval Division, and the equipment will be undertaken by the Young Men's Christian Association.

THE BEAUFORT WAR HOSPITAL.—The Bristol Lunatic Asylum at Fishponds is to be used for the reception of wounded soldiers. It will provide 1040 beds, and is to be called the Beaufort War Hospital.

A MUNIFICENT BENEFACTOR.—It was reported at the annual meeting of the Nottingham Hospital on April 28th that the contributions of the late Sir Charles Seely to that institution had exceeded £100,000 in the last 20 years.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At the Final Examination of the Conjoint Examining Board, held from April 6th to 22nd, the following candidates were approved in the under-mentioned subjects:—

Medicine.—A. C. Ainsley, Cambridge and London; D. W. J. Andrews, Middlesex; T. Anwyl-Davies, St. Thomas's; C. Backus, St. Mary's; C. W. W. Baxter, Guy's; M. Bayumi, Cairo and London; W. K. Bigger, Cambridge and St. Thomas's; S. C. Biswas, Calcutta and St. Mary's; C. V. Boland, St. Bartholomew's; J. P. Bracken, University College; H. F. Brice-Smith, Cambridge and Middlesex; A. D. Brooks, Royal Free; C. M. Brophy, University College; J. K. J. Chambry, Amsterdam and St. Mary's; F. B. Chavasse, Oxford and Liverpool; J. E. Clark, Guy's; M. C. Clark, Royal Free; E. C. Cline and R. Curle, Guy's; R. M. Dannatt, St. Bartholomew's; E. I. Davies, Cardiff and Charing Cross; L. ap I. Davies, University College; T. H. Edey and C. H. Edwards, Guy's; M. Fahmy, Cairo and London; N. Fahmy, Cairo and King's College; R. C. Fairbairn, Oxford and St. Bartholomew's; A. M. C. Forster, Royal Free; S. C. Ghose, Calcutta and St. Mary's; O. Gleeson, Westminster; B. H. Greensill, Birmingham; W. T. Gwynne-Jones, London; G. Habgood, Cambridge and London; G. H. Haines, University College; S. A. Hall and C. E. Harrison, Middlesex; H. S. Hensman, Madras and London; W. Hillbrook, Cambridge and St. George's; R. W. Hodgson-Jones, Manchester; R. A. Holmes, Guy's; G. J. P. Huddleston, Birmingham and University College; S. Hutchinson, University College; S. W. Isaacs, St. Bartholomew's; G. M. Jackson, Bristol; V. C. James, Middlesex; H. C. Jennings, St. Thomas's; R. B. John, Cardiff and Westminster; D. R. Jones, Guy's; D. P. Karaka, Bombay and London; C. H. Keay, Durham; N. E. Kendall, Guy's; J. S. Kennedy, Cambridge and St. George's; R. D. Langdale-Kelham, University College; E. E. D. Lau, Durham; C. G. Learoyd, St. Thomas's; J. S. Leslie, London; P. K. Liang, Cambridge and London; G. S. B. Long, Guy's; M. L. Loveless and W. B. Loveless, Middlesex; H. J. McCurrich, Bristol and St. Bartholomew's; A. J. V. McDonnell, London; A. McInnis, Toronto and London; W. G. McKenzie, Bristol; J. E. C. Maguire, St. Bartholomew's; G. Mallya, Madras and St. Bartholomew's; A. H. Manfield, London; C. J. Marshall, Charing Cross; R. G. Michelmore, London; D. C. Ogilvie, Middlesex; W. L. Partridge, Guy's; S. V. P. Pill, St. Mary's; C. L. G. Powell, St. Thomas's; R. A. W. Procter, Cambridge and St. Thomas's; A. L. Punch, Guy's; R. W. Rammell and C. R. Reckitt, London; A. E. Richmond, St. Thomas's; E. S. Rowbotham, Charing Cross; J. T. Samuel, University College; C. H. Savory, Cambridge and St. Bartholomew's; H. M. Scarborough, Royal Free; E. H. S. Scarr, Manchester; N. A. Scott, St. Bartholomew's; J. M. Shah, Bombay and St. Bartholomew's; T. W. Sheldon, Cambridge and Guy's; S. Simons, Cardiff and St. Mary's; T. H. Somervell, Cambridge and University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, Cambridge and St. Bartholomew's; R. G. Sterling, London; J. G. Stevens and A. H. Taymour, Guy's; R. C. Thomas, Cardiff and Westminster; A. P. Thomson, Birmingham; J. R. Tibbles, Aberdeen and London; E. Underhill, Birmingham; J. E. A. Underwood, University College; S. K. Vaidya, London; H. C. Viehoff, Liverpool; T. T. B. Watson, London; E. S. White, Bristol; C. M. Williams, Cardiff and St. Mary's; and G. R. C. Wilson, St. Thomas's.

Surgery.—A. C. Ainsley and C. G. Ainsworth, Cambridge and London; D. R. Alexander, St. Mary's, W. G. E. Allen, St. Bartholomew's; D. W. J. Andrews, Middlesex; F. L. Apperly, Oxford and Dublin; J. H. Bayley, London; C. M. Brophy, University College; J. B. Cavenagh, Oxford and St. Thomas's; J. K. J. Chambry, Amsterdam and St. Mary's; F. B. Chavasse, Oxford and Liverpool; P. Cheal, London; Y. J. Cieb, St. Thomas's; V. M. Coates, Cambridge and Bristol; H. M. Collins, London; W. L. Cox, Middlesex; R. Curle, Guy's; E. I. Davies, Cardiff and Charing Cross; J. K. Davies, St. Bartholomew's; W. A. Easton and C. H. Edwards, Guy's; H. H. L. Ellison, St. Bartholomew's; I. Feldman, jun., London; I. Feldman, sen., London; F. J. Folinsbee, Western University; A. M. C. Forster and C. I. Fox, Royal Free; G. C. Gell, Middlesex; C. C. G. Gibson, Guy's; B. Graves, Charing Cross; G. D. Gripper and H. S. Groves, Guy's; G. Habgood, Cambridge and London; S. A. Hall, Middlesex; R. Hargreaves, University College; R. C. Hewitt, Cambridge and St. Thomas's; R. A. Holmes, Guy's; H. R. W. Husbands and G. M. Jackson, Bristol; L. G. Jacob, Cambridge and London; R. B. John, Cardiff and Westminster; C. H. Keay, Durham; N. E. Kendall, Guy's; J. B. Leather, Cambridge and Birmingham; S. J. L. Lindeman, St. Bartholomew's; H. J. McCurrich, Bristol and St. Bartholomew's; A. J. V. McDonnell, London; J. B. McFarland, St. Bartholomew's; S. Mallinick, Halle and London; C. J. Marshall, Charing Cross; R. P. S. Mason, Middlesex; B. Mitra, Calcutta and Guy's; A. H. Morley and C. G. T. Mosse, London; N. F Norman, St. Bartholomew's; D. C. Ogilvie, Middlesex; T. Owen, Cambridge and St. Bartholomew's; C. P. O. Panditheseker, Ceylon and Middlesex; O. Parry-Jones, London; B. W. Paul, Calcutta and Royal Free; E. C. Peers, Guy's; W. S. J. Peiris, Ceylon and London; L. D. Phillips, University College; H. D. Pickles, Leeds; R. F. Pinson, Birmingham; G. W. Pool, C. L. G. Powell, and T. L. Price, St. Thomas's; R. M. Riggall, Manchester; A. I. Ribau, St. Bartholomew's; G. W. R. Radkin, University College; S. K. Sanyal, London; F. J. P. Saunders, Cambridge and St. Thomas's; C. H. Savory, Cambridge and St. Bartholomew's; H. M. Scarborough and E. A. Shaw, Royal Free; J. G. B. Smith, St. Bartholomew's; J. A. B. Snell, Cambridge and University College; T. H. Somervell, University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, Cambridge and St. Bartholomew's; R. G. Sterling,

London; D. P. Thomas, St. Bartholomew's; D. C. Thomas, St. Thomas's; R. C. Thomas, Cardiff and Westminster; H. Q. F. Thompson, Guy's; R. R. Thomson, London; A. P. Thomson, Birmingham; J. R. Tibbles, Aberdeen and London; E. J. Tyrrell, Durham; J. E. A. Underwood, University College; W. E. Wade, Charing Cross; P. Wallice, Cambridge and London; M. J. T. Wallis, Guy's; A. H. Warde, St. Thomas's; A. R. S. Warden, Cambridge and St. Thomas's; K. J. F. Westman, Guy's; E. S. White, Bristol; B. Whitehead, St. Bartholomew's; H. A. B. Whitelocke, Oxford and King's College; G. L. Wilkinson, Birmingham; J. D. Wilkinson, St. Thomas's; C. M. Williams, Cardiff and St. Mary's; W. B. Wilson, St. Bartholomew's; G. W. Woodhouse, St. Thomas's.

Midwifery.—A. Z. Abushady, Cairo and St. George's; J. S. Alexander, University College; W. G. E. Allen, St. Bartholomew's; H. K. Alton, Royal Free; P. W. L. Andrew, Middlesex; J. Aydon, Cambridge and St. Bartholomew's; R. T. Bailey, Charing Cross; G. C. G. Baldini, St. Bartholomew's; E. G. Barker, St. Mary's; J. V. Bates, Cambridge and University College; K. L. Bates, Guy's; J. J. O. Beven, Cambridge and Middlesex; K. S. Bhat, Madras and St. Bartholomew's; E. Biddle, Cardiff and Guy's; J. A. Binning, University College; D. A. Blount, St. Bartholomew's; H. F. Brice-Smith, Cambridge and Middlesex; J. Brooks, Manchester; C. M. Brophy, University College; I. F. Buckle, Royal Free; A. S. Carter, Middlesex; L. A. Celestin, University College; M. Chadwick, Cambridge and Guy's; F. B. Chavasse, Oxford and Liverpool; G. E. Chissell, Middlesex; H. M. Cohen, Manchester; S. J. Cowell, Cambridge and University College; E. S. Cuthbert, St. Bartholomew's; E. I. Davies, Cardiff and Charing Cross; R. O. Eades, University College; N. G. El-Gawly, Cairo and St. Bartholomew's; H. Ellis, St. George's; W. J. Evans, Cardiff and University College; R. C. Fairbairn, Oxford and St. Bartholomew's; R. K. Ford, London; A. M. C. Forster, Royal Free; H. Gardiner-Hill, Cambridge and St. Thomas's; P. C. Gibson, London; G. T. Gimlette, St. Thomas's; O. Gleeson, Westminster; E. A. Green and F. H. S. Greenish, Cambridge and London; G. H. Haines, University College; H. W. Hales, Cambridge and St. Bartholomew's; R. C. Hewitt, Cambridge and St. Thomas's; R. B. Hick, St. Mary's; F. E. Higgins, Cambridge and St. Thomas's; N. H. Hill, St. Bartholomew's; R. W. Hodgson-Jones, Manchester; L. S. Holmwood, Cambridge and Middlesex; H. L. G. Hughes, University College; S. C. W. Iredale, St. Bartholomew's; G. M. Jackson, Bristol; L. G. Jacob, Cambridge and London; V. C. James, Middlesex; H. C. Jennings, St. Thomas's; R. B. John, Cardiff and Westminster; L. P. Johns, King's College; C. S. J. Kearney, St. Bartholomew's; C. H. Keay, Durham; F. A. Knott, Guy's; R. D. Langdale-Kelham, University College; M. E. A. Latif, Cairo and Middlesex; E. E. D. Lau, Durham; J. B. Leather, Cambridge and Birmingham; J. C. Lee, McGill; S. J. L. Lindeman, St. Bartholomew's; G. C. Linder, St. Bartholomew's; E. M. Litchfield, New Zealand and Guy's; V. E. Lloyd, Guy's; M. L. Loveless and W. B. Loveless, Middlesex; H. J. McCurrich, Bristol and St. Bartholomew's; W. G. McKenzie, Bristol; S. A. S. Malkin, University College; C. J. Marshall and G. S. Marshall, Charing Cross; B. R. L. Mayman, King's College; F. Mohamed, Cairo and Westminster; F. Molina, St. Thomas's; A. H. Morley, London; I. Mortada, Cambridge and University College; J. K. Muir, Middlesex; N. S. Nairne, St. Thomas's; F. W. Noble, Aberdeen and Middlesex; H. M. Oddy, Oxford and St. Thomas's; T. Owen, Cambridge and St. Bartholomew's; L. G. Phillips, Middlesex; H. D. Pickles, Leeds; R. F. Pinson, Birmingham; A. E. A. Poulier, Ceylon and Middlesex; E. A. Prichard-Evans, Middlesex; R. A. W. Procter, Cambridge and St. Thomas's; J. N. Puri, London; K. N. Purkis, Guy's; G. J. Randell, Cardiff and Westminster; H. Ratnarajah, Ceylon and St. Mary's; T. H. Rhys, Cardiff and Charing Cross; E. D. Richardson, Charing Cross; R. L. Robinson, University College; L. C. S. Roche, St. Thomas's; S. K. Sanyal, London; F. J. P. Saunders, Cambridge and St. Thomas's; C. H. Savory, Cambridge and St. Bartholomew's; N. A. Scott, St. Bartholomew's; W. W. S. Sharpe, St. Mary's; E. G. Sherwood, Royal Free; R. Sinha, Punjab and London; T. H. Somervell, Cambridge and University College; H. G. Sparrow, St. George's and Durham; G. S. Stathers, St. Bartholomew's; R. Stowers, University College; R. F. Sturridge, Middlesex; T. C. Summers, London; T. J. Taunton, St. Bartholomew's; R. R. H. O. Tha, Cambridge and University College; J. W. T. Thomas, Cardiff and Middlesex; W. L. Thomas, Middlesex; R. R. Thompson, London; I. S. Tirard, Cambridge and King's College; R. S. Topham, Leeds; E. J. Tyrrell, Durham; E. Underhill, Birmingham; H. J. Wallace, University College; H. J. Wallace, Royal Free; A. A. Watkinson, Charing Cross; J. W. Wayte, St. Thomas's; E. S. White, Bristol; E. M. White, Royal Free; W. R. White-Cooper, St. Bartholomew's; H. Whyte, London; N. J. Wigram, Sheffield; C. M. Williams, Cardiff and St. Mary's; G. R. C. Wilson, St. Thomas's; and G. C. N. Younger, Middlesex.

VICTORIA UNIVERSITY OF MANCHESTER.

At the Final M.B. and Ch.B. examination, held recently, the following candidates were successful:—

J. C. Bramwell and J. E. Brooks.

Obstetrics and Surgery.—S. G. J. Dowling.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST.

The sixty-seventh annual report of this institution shows a reduced income and a larger expenditure for the year 1914 as a result of the war. Fortunately, however, substantial legacies have been received by the hospital during the past two years. For the year under notice 162 beds were in daily occupation, the average length of stay of each patient being nearly ten weeks. The number of new cases registered in the out-patient department was 7473, the total number of attendances being 31,193. With the report is included the reproduction of a scroll commemorative of the foundation-stone laying, a coloured picture of the grounds of the hospital, and illustrations of different departments of he institution.

ROYAL MEDICAL BENEVOLENT FUND.

At the last meeting of the committee 39 cases were considered and grants amounting to £365 10*s.* were voted to 35 of the applicants. The following is a summary of the cases relieved:—

Daughter, aged 59, of M.R.C.S. Eng. who practised at Long Sutton. Had worked as governess and housekeeper for many years, but owing to recent death of employer is now out of employment. Only income an investment bringing in £5 per annum, and age against obtaining fresh situation. Voted £12 in 12 instalments.—Daughter, aged 45, of M.R.C.S. who practised at Burgh le Marsh. Lives with mother who has only a very small income. Applicant earned living as a teacher of music until the war commenced, but practically all her pupils have now given up. Voted £10, and referred to the Professional Classes War Relief Council.—Widow, aged 40, of M.B., Ch.M. Aberd. who died in 1914 and who practised at Manchester. Applicant left with seven children, ages 3 to 14 years, one son suffering from spinal disease. Only income a little from the sale of the practice. Requires help for the education of the children. Voted £5 and referred to the Guild.—Daughter, aged 57, of M.D. who practised at Kirkdale. Had earned a living at dressmaking until health became bad. Rent is paid by friends, but no income at present. Voted £12 in 12 instalments.—Widow, aged 44, of M.B., C.M. Glasg. who practised at Lenton and died in 1914 after a long illness, and was unable to provide for his widow. Earns a little, a collector for a society, but not sufficient to keep her. Two children, 10 and 12. Voted £10 in two instalments.—Wife, aged 53, of M.R.C.S. Eng. who practised at Retford, but is now totally incapacitated from work and is in a home. One son, who is being educated by a relative. Only certain income £3 per annum. Voted £5, with leave to apply again and referred to the Guild for report.—Daughter, aged 68, of L.S.A. who practised at Christchurch. Has earned a living as an artist, but owing to failing eyesight unable to follow her profession and sell the few pictures she has on hand. Voted £18 in 12 instalments.—Widow, aged 42, of L.S.A. who died this year and had practised at Padstow. Husband was ill with general paralysis for four years before death. Has tried to keep her home together for some time by taking in boarders, but has had none since the war commenced. One daughter, who is being educated at St. Ann's School. Voted £10.—Daughter, aged 33, of M.R.C.S. Eng. who practised at Whitechapel. Lives with mother, who has an Epsom pension. Applicant worked in one situation for many years, but has been discharged owing to war. Wants help to be trained as midwife. Training to be provided free, but outfit required. Appointment promised at end of training. Voted £12 through the Guild.—Daughter, aged 60, of M.R.C.S. Eng. who practised at Leeds. Applicant lives with her mother, who is a confirmed invalid. Lost all her capital in the Franklin frauds. Only income about £6 10*s.* per annum, and help from the Guild and the Fund. Previous help three times, £36. Voted £12 in 12 instalments.—Daughter, aged 53, of M.R.C.S. Eng. who practised at Rickmansworth. Suffering from arthritis and fibrosis. Only income £39 per annum from a relative. Quite unable to work. Relieved twice, £20. Voted £10 in two instalments.—Daughter, aged 58, of M.R.C.S. Eng. who practised at Peckham. Health very bad indeed. Only income £19 per annum from a sister. Relieved 17 times, £197. Voted £12 in 12 instalments.—Widow, aged 59, of M.R.C.S. Eng. who practised at Maida Vale. Was left entirely without means and suffering from chronic rheumatism and weak heart. Relieved 12 times, £118. Voted £15 in 12 instalments.—Daughter, aged 68, of M.R.C.S. Eng. who practised at Cranbrook. Very delicate and requires someone to look after her. Has an annuity from another benevolent fund, but not sufficient to maintain herself. Relieved 16 times, £168. Voted £12 in 12 instalments.—Widow, aged 45, of M.B., C.M. Edin. who practised at Ballindallock. Left totally unprovided for at husband's death in 1910. Has four children, three of whom are at school. Tries to earn a little by letting rooms, but has been unsuccessful lately. Relieved four times, £40. Voted £10 in two instalments.—Widow, aged 67, of M.R.C.S. Eng. who practised at Sheffield. Has made a little by teaching German in private schools, but cannot obtain any work at present. Has an Epsom pension. Relieved 15 times, £112. Voted £10 in two instalments.—Daughter, aged 59, of M.R.C.S. Eng. who practised at Blackheath. Has suffered since childhood with a nervous complaint, and never been able to work. Her sister helps as much as possible. Relieved 10 times, £91. Voted £10 in two instalments.—Widow, aged 84, of M.R.C.S. Eng. who practised at Great Marlow. Has three daughters, two of whom, along with one son, are deaf and dumb. None are able to earn much, and all live at home. Relieved 12 times, £80. Voted £18 in 12 instalments.—Widow, aged 60, of M.R.C.S. Eng. who practised at North Shields. Has five sons, three of whom have joined the army; consequently her income is very much reduced. One son too ill to work and the other abroad unable to help. Relieved once, £5. Voted £15, and advised to apply to the National Relief Fund.—M.D. of Dublin, aged 81, single, who practised in Lancashire. Old age prevents him from following his professional work. Has an Epsom pension. Relieved once, £18. Voted £18 in 12 instalments.—M.R.C.S. Eng., aged 77, a widower, who practised at Rainham. Gets a little locum work occasionally, but health and age will not allow him to do much. Relieved once, £18. Voted £18 in 12 instalments.—Widow, aged 60, of L.F.P.S. Glasg. who practised at Rothesay. Endeavours to obtain a living by letting rooms, but at present has none let. Suffers from rheumatism. Has a pension of £12. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 74, of M.D. who practised at Leominster. Has no income and is an inmate of a home for incurables. Requires a little help for clothes and a few necessary comforts. Was an annuitant of the Fund until she went into the home. Relieved 17 times, £209. Voted £8 in 12 instalments.—Widow, aged 56, of L.R.C.P. Edin. who practised at Blackburn. Earns a little by the day nursing children; health not good. Has one daughter who is now beginning to earn a little as a shop assistant. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 60, of M.D. Edin. who practised in London. Suffering from varicose veins and only able to earn very little by sewing. Lives with a sister who has also been helped by the Fund. Relieved nine times, £50. Voted £12 in 12 instalments.—Widow, aged 64, of M.R.C.S. Eng. who practised at Streatham. Only income £40 per annum; has an invalid daughter and other children unable to help. Too old and not strong enough to work. Relieved once, £12. Voted £12 in 12 instalments.—Daughter, aged 53, of M.R.C.S. Eng. who practised at Newport, Mon.

Applicant is blind, and recently has had an internal operation. Income only a few pounds a year from other charities. Relieved four times, £48. Voted £12 in 12 instalments.—Widow, aged 52, of M.B. Aberd. who practised in Warwickshire and Australia. Has been confined to her bed with severe illness for some months. Children only able to help very slightly; also obtains a little help from sister, but not sufficient to provide necessities. Relieved seven times, £73. Voted £12 in 12 instalments.—Widow, aged 75, of L.R.C.P. Edin. who practised at Birmingham. Has recently met with an accident, and has had to obtain help in the home. Has eight children, two of whom live at home but only able to contribute 10s. each week, and the other children married, and only able to give very little. Relieved three times, £30. Voted £18 in 12 instalments.—Emergency grants amounting to £15 10s. were also given to six applicants, and their cases were deferred for future consideration.—Four vacancies of £20 each among the annuities were also filled at this meeting.

The grants detailed above involve the Fund in an expenditure of £365 10s., to meet which there is only an available balance of £49. The claims on the Fund arising out of the war are increasing month by month, but the resources show a decrease. Immediate support is essential unless the reserves are to be seriously depleted. Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

USE OF PRESERVATIVES IN CREAM: APPEAL TO THE LOCAL GOVERNMENT BOARD.—With the view of putting pressure on the Local Government Board to secure the appointment of the long-promised Departmental Committee to consider the question of a standard quantity of preservative to be used in cream, the coöperation of Mr. Mead, the Marlborough-street police-court magistrate, has been secured by Mr. F. W. Beck, who represented the defendants at the hearing of summonses against two dairymen at the court recently. Proceedings were instituted by the Westminster City Council against Champion's Dairy, Limited, for having on March 1st sold preserved cream mixed with a preparation of boric acid equivalent to 0·42 per cent.—i.e., 29 grains per pound of crystallised boric acid, so as to render it injurious to health; and against David John Morgan, trading as J. Morgan and Son, for having on Feb. 17th sold preserved cream mixed with 0·40 per cent. by weight of boric acid (H_3BO_3) equivalent to 28 grains of boric acid per pound of cream, so as to render it injurious to health. Mr. Rotten represented the council. Mr. Beck, on the case of Champion's Dairy being called, said the magistrate would remember that these summonses had been adjourned in order that he might communicate with the Local Government Board his worship's intention to proceed that day with the hearing. He had communicated with the Local Government Board accordingly, and had received a reply that it was contrary to their practice to intervene in cases which were the subject of proceedings, at the same time referring him to a reply by the President to a question in the House of Commons in which he said that in consequence of the war it had been impossible to proceed with the appointment of the promised Departmental Committee, that there was difference of opinion as to the use of preservatives, but that it was inadvisable under present circumstances for authorities to institute proceedings. In view of that answer he suggested that Mr. Mead should adjourn the summonses *sine die*, thus following the course pursued by his colleagues in other metropolitan courts. In support also of his proposal he mentioned that 17 summonses issued against other defendants by the Westminster City Council had already been adjourned with the consent of Mr. Rotten. Mr. Mead decided to adjourn the summonses for two months, and in the meantime to intimate to the President of the Local Government Board that he considered it most urgent that the Board should fix a standard as speedily as possible, as not only the authorities and the trade but also the magistrates experienced great difficulty in dealing with the matter.

MEDICAL SOCIETY OF LONDON.—The general meeting for the election of officers and council will take place on Monday next, May 10th, at 8 P.M. Mr. D'Arcy Power will give a short demonstration, illustrated by the epidiascope, on Early Books on Naval and Military Surgery from the society's library. After the meeting a selection of some of the society's old and rare medical works will be on exhibition. Owing to the absence of Sir William Osler on military service the annual oration and conversazione fixed for May 17th will not take place.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION.—A council meeting was held on April 27th, Surgeon-General G. J. H. Evatt, the President, being in the chair. Dr. Major Greenwood, honorary secretary, reported the action taken on the attempt of the Paddington guardians to appoint, subject to a determination of office at three months' notice, a district medical officer residing in the district. A letter was addressed to the Local Government Board in November drawing attention to this as an infringement of the Medical Appointments Order (the reason given by the board being their desire, at an opportune time in the future, to organise their medical relief after the manner of the Bermondsey guardians), and urging the Local Government Board to refuse consent, unless a proper scheme were laid before them. The Local Government Board had finally given consent to the appointment of a district medical officer, but only for a limited period. If at the end of the time the guardians had no scheme ready they would be required to appoint a medical officer in accordance with the Medical Appointments Order. Had the Paddington guardians been permitted to appoint a medical officer for an indefinite time, subject to a three months' notice, the security of tenure of all district medical officers would have been seriously threatened. The honorary secretary was directed to watch carefully any further developments in the Paddington union. A letter was read from Dr. E. R. Fothergill re the Federation of Medical Societies with the British Medical Association. It was unanimously agreed that some kind of federation was desirable, but that any concrete scheme must be examined very closely. Independence was needful for the Poor-law Medical Officers' Association, and hitherto they had endeavoured to work as much as possible in conjunction with the Public Health and Poor-law Committee of the British Medical Association. The financial bearing also was important, as present subscriptions were really inadequate for their present work. Letters were then considered from Dr. A. Drury (Halifax) dealing with important Poor-law questions: (1) As to the right of a lady visitor to order the attendance of a medical officer; (2) whether it was part of the duty of a medical officer to diagnose refraction and prescribe spectacles; (3) whether a lady visitor could demand a report on a case from the medical officer; and (4) whether the clerk could require of a medical officer a report as to the sanitary condition of a house. The council answered all these questions in the negative, adding with regard to (4) that while the medical officer ought to draw the attention of the guardians to any serious sanitary defect that interfered with proper attention to a Poor-law patient, the general sanitary state of the house should be reported on by the medical officer of health. The council unanimously confirmed the appointment of the honorary secretary, Dr. Major Greenwood, to act as their representative on the Council for District Nursing. The honorary secretary said that the report of the Association on the Poor-law Institutions Order, 1913, had been considered by the Public Health Committee of the British Medical Association, and on their recommendation had been endorsed by the central council. In regard to the situation of Poor-law medical relief at Burnley a letter was read from Dr. A. P. Agnew, in which it was stated that on April 9th, at a meeting of the Burnley Division of the British Medical Association, a resolution was passed that no member should accept a post as district medical officer under the guardians in the existing conditions. The profession refused to consider any setttlement till the late public vaccinators were reinstated, and then the other difficulty seemed insuperable. The council thought it was a matter for a Local Government Board inquiry. The honorary secretary was directed to ask Dr. Agnew to furnish any instance of neglect or deficient attendance on Poor-law patients. The council then considered complaints of Poor-law medical officers employed on military duties that they did not receive the same consideration as was given to other civilian practitioners. The following resolutions were unanimously carried:—

1. That in all cases where military duties are discharged by Poor-law medical officers the salaries paid to whole-time officers should be on a scale not less than that paid by the War Office to members of the Royal Army Medical Corps discharging similar duties.
2. That where the duties are part-time only, an addition should be made to the medical officer's salary in proportion to the extra labour involved.

It was decided that the annual meeting should be held early in July, preceded by a council meeting, and that only formal or urgent business should be transacted.

ROYAL INSTITUTION.—The annual meeting of the members of the Royal Institution was held on May 1st, Sir James Crichton-Browne, Treasurer and Vice-President, being in the chair. The annual report of the committee of visitors for the year 1914, testifying to the continued prosperity and efficient management of the institution, was read and adopted. The report of the Davy Faraday Research Laboratory committee was read. Forty-four new members were elected in 1914. Sixty-two lectures and 19 evening discourses were delivered in 1914. The books and pamphlets presented amounted to about 338 volumes, making with 652 volumes (including periodicals bound) purchased by the managers, a total of 990 volumes added to the library in the year. Thanks were voted to the president, treasurer, and secretary, to the committees of managers and visitors, and to the professors, for their valuable services to the institution during the past year. The following gentlemen were unanimously elected as officers for the ensuing year:—President: The Duke of Northumberland. Treasurer: Sir James Crichton-Browne. Secretary: *Colonel Edmond H. Hills. Managers: *Sir Thomas Barlow, Dr. Horace T. Brown, *Dr. J. H. Balfour Browne, Dr. Andrew Carnegie, Mr. Charles Edward Groves, Sir Robert Hadfield, *Mr. Charles Hawksley, the Hon. Richard C. Parsons, *Mr. Edward Pollock, *Sir James Reid, Lord Rothschild, Mr. Alexander Siemens, Mr. Alan A. Campbell Swinton, Mr. Harold Swithinbank, and *Lord Wrenbury. Visitors: Rev. Edward S. Dewick, Lieutenant-Colonel Henry E. Gaulter, Mr. Joseph G. Gordon, Dr. William J. Gow, Dr. J. Dundas Grant, Mr. John W. Jarvis, Mr. James Y. Johnson, Mr. H. R. Kempe, Mr. Francis Legge, Mr. Francis K. McClean, Mr. Ernest R. Moon, Mr. Richard Pearce, Mr. Henry G. Plimmer, Mr. Arthur J. Walter, and Sir Henry J. Wood. At a general meeting held on Monday last, May 3rd, the Duke of Northumberland, K.G., the President, in the chair, special thanks were returned to Dr. Thomas Dewar for a donation of £15 15*s.* to the Fund for the Promotion of Experimental Research at Low Temperature. The managers whose names above are marked with an asterisk were elected vice-presidents.

NORFOLK AND NORWICH HOSPITAL.—The report of the board of management of this hospital for the year 1914 records a deficit of £1857 10*s.* 8*d.* The total income was £12,429 6*s.* 9*d.* and the total expenditure £14,286 17*s.* 5*d.* Without encroaching on the ordinary accommodation of the hospital, provision was made for the treatment of the sick and wounded from the seat of war. 937 men were received up to Dec. 31st, 1914. Since that time further accommodation has been provided.

Her Majesty the Queen has sent £250 to the London (Royal Free Hospital) School of Medicine for Women to pay for the training and expenses of a woman medical student. The money formed part of a fund placed at the disposal of the Queen by the wives of Freemasons. The council will make known shortly the conditions for the award of the Queen's gift.

ROYAL SANITARY INSTITUTE. — A sessional meeting of the institute will be held in the Guildhall, Shrewsbury, on Friday, May 28th, when a discussion on the Value of Mechanical Filters in the Purification of Water will be opened by Dr. Thomas Orr, medical officer of health of Shrewsbury. On Saturday, May 29th, visits will be made to Shrewsbury Housing Scheme, Ditherington; Mechanical Filters, Chester-street; and the Public Abattoir.

A GOLDEN WEDDING.—Mr. Alfred Grace, M.R.C.S., L.S.A., of Chipping Sodbury, Gloucestershire, a brother of Mr. W. G. Grace, celebrated the fiftieth anniversary of his wedding on April 26th, and received the congratulations of his friends and patients. Mr. Grace, like his brother, has been a noted sportsman, but his keenness for hunting eclipsed his interest in cricket.

A CENTENARIAN.—Rachel Case, of Wootton Fitzpaine, near Charmouth, has recently died in her 101st year.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Government and the Drink Problem.

PARLIAMENT has now been informed of the measures which the Government propose as a means of checking the excessive consumption of alcoholic beverages in war time, particularly in districts where munitions of war are being produced. The scheme is twofold—control of the licensed trade in the munition areas, and heavy additional taxation on beer and spirits. The necessary Parliamentary powers to enable the control to be exercised is taken by the Defence of the Realm (Amendment No. 3) Bill, which was introduced by the Chancellor of the Exchequer in the House of Commons on Thursday, April 29th. That control goes the length of having power to close any public-house, the presence of which for the moment is considered injurious. On the same evening resolutions were passed in Committee of Ways and Means for the purpose of imposing very heavy additional taxation upon spirits and also upon beers containing more than 7 per cent. of proof spirit. The duty upon spirits is practically doubled, the surtax being at the rate of 14*s.* 9*d.* per gallon. In the original resolution submitted to the House it was proposed that a proportionate increase of duty should be imposed on the following articles in which spirit is contained, or in the manufacture of which spirit is used—chloral hydrate, chloroform, collodion, ether acetic, ether butyric, ether sulphuric, iodide of ethyl, ethyl bromide and ethyl chloride. These articles were, however, omitted from the resolution imposing the surtax, on the motion of the Attorney-General. The wine duty is quadrupled and an additional charge of 15*s.* put on sparkling wine in bottle. The additional duties on the heavier beers are on a sliding scale which is as follows:—For every 36 gallons of beer brewed at a gravity of more than 43° and not exceeding 48°, 12*s.*; of more than 48° and not exceeding 53°, £1 4*s.*; of 53° and over, £1 16*s.*

These resolutions had provisional effect as soon as they were passed, but in order that a more permanent character should be given to them they require to be embodied in a Finance Act.

A good deal of criticism has been made of the Government proposals to place heavy taxes on beer and spirits. The Chancellor of the Exchequer has been meeting deputations from the licensed trade, and the opinion is strongly held at Westminster that considerable modifications in the scale of the duties will be made. But the whole subject at present is under negotiation.

Local Government Board Report.

The forty-third annual report of the Local Government Board (Part III.) for the year 1913-14 has been issued as a Parliamentary Blue-book. It deals with public health and local administration.

HOUSE OF COMMONS.

WEDNESDAY, APRIL 28TH.

Vaccination in the Central Provinces.

Mr. SNOWDEN asked the Under Secretary of State for India whether it was proposed to introduce legislation into the Central Provinces for the enforcement of vaccination; and, if so, whether a conscience clause would be introduced into the Vaccination Act, as in the case of the English and Scotch Vaccination Acts of 1907.—Mr. CHARLES ROBERTS replied: Compulsory vaccination is already enforceable in municipalities at the request of the municipal commissioners and cantonments in the Central Provinces under an Act of 1880. An amending Bill is now proposed extending the power of enforcing compulsory vaccination to certain quasi-municipal areas. It is specified both in the Act and in the amending Bill that it is open to any inhabitant of the area to object to the extension, but in neither case is there a conscience clause.

THURSDAY, APRIL 29TH.

Anti-Inoculation Leaflet.

Mr. RONALD MCNEILL asked the Under Secretary for War whether his attention had been called to the circulation by some person or persons unknown of a leaflet suggesting that a Territorial died last November, at Lytham, as the result of antityphoid inoculation, and that the death certificate falsely alleged a different cause of death; and whether he would take steps to prevent the dissemination of incitements to soldiers to endanger their own and their comrades' lives by refusing to undergo inoculation.—Mr. TENNANT said in reply: Reports have been received that this leaflet has been distributed both with and without the statement that the death was ascribed to a different cause on the death certificate. Such steps as were considered necessary have been taken.

Mr. MCNEILL: Cannot the right honourable gentleman deal with this matter under the Defence of the Realm Act?—Mr. TENNANT: I am advised that proceedings could not be taken in this case. Therefore I am afraid that the answer to the honourable Member is in the negative. But if he likes to repeat the question I will give him a more definite reply.

Medical Officers of the Territorial Force.

Mr. FALLE asked the Under Secretary for War whether he was aware that all lieutenants, Royal Army Medical Corps, had recently been promoted to the rank and pay of captains, and whether a medical officer, however long his service, attached to a unit other than a medical unit could not attain higher rank than that of major, while *à la suite* medical officers, who were not attached to Territorial or other units before the war, started now as lieutenant-colonels, majors, and captains, and drew the pay of those ranks; that officers *à la suite* were, for the most part, able to remain in their own town and carry on their private practice without passing any examination for rank; whether he could see his way to grant all majors and captains of, say, five years' standing, attached before the war to Territorial or other units, the rank of lieutenant-colonel or major and the pay of those ranks; and would he remove the disadvantages as to promotion and pay now attaching to the medical officer who had served for years before the war attached to a Territorial or other unit.—Mr. TENNANT said in reply: The position of Territorial Force Royal Army Medical Corps officers in regard to promotion and pay is now under consideration.

Medical Attendance and Hospital Charges for Soldiers.

Mr. WING asked the Financial Secretary to the War Office whether the weekly charge for insurance covered all medical attendance and hospital charges for soldiers without further deductions.—Mr. TENNANT answered: No, sir. Medical attendance is free, but for hospital treatment a stoppage up to, but not exceeding, 7*d.* a day may be made if the officer commanding so decides.

Health of the New Troops in India.

Mr. SAMUEL SAMUEL asked the Under Secretary for India whether he could recommend his department to supply to the troops in India mosquito nets to prevent the sickness amongst the new troops going out and to ensure economy to the country in extra efficiency.—Mr. CHARLES ROBERTS replied: The provision of mosquito curtains has been sanctioned for all men of the Territorial Force who may have to serve on the plains in India in the coming summer.

Bovine Tuberculosis.

Sir JOHN SPEAR asked the Parliamentary Secretary to the Board of Agriculture how many bullocks suffering from tuberculosis were destroyed during the last complete year, and the amount of compensation paid to the owners of the animals.—Sir HARRY VERNEY answered: The number of bovine animals in respect of which notices of intended slaughter under the Tuberculosis Order, 1913, were received during the year ended June 30th, 1914, was 6651, but the actual number of animals slaughtered was probably less. Compensation is paid by the local authorities, and only in part refunded by the Board.

TUESDAY, MAY 4TH.

Enteric Fever in the Expeditionary Force.

Replying to Sir COURTENAY WARNER, Mr. TENNANT (Under Secretary for War) said: The latest information with regard to the incidence of enteric fever amongst the British troops in the Expeditionary Force is as follows. Up to date 963 cases have occurred. Of these, 780 have been analysed and 142 cases have occurred in men inoculated fully with two doses of vaccine. Amongst these 10 deaths have occurred, giving a case mortality of 7 per cent. 157 cases have occurred in men partially protected by inoculation—i.e., who have had only one dose of vaccine. Amongst these there have been 10 deaths, giving a case mortality of 6·36 per cent. 481 cases have occurred in uninoculated men. Amongst these there have been 100 deaths, giving a case mortality of 20·79 per cent. To appreciate the full value of these figures it must be brought to notice that 90 per cent. of the troops forming the Expeditionary Force have been inoculated voluntarily. Therefore, amongst 90 per cent. of the force—i.e., inoculated men—there have been 299 cases and 20 deaths. In the other 10 per cent.—i.e., uninoculated men—there have been 481 cases and 100 deaths.

Release of Medical Personnel.

Sir JOHN LONSDALE asked the Secretary of State for Foreign Affairs whether any agreement had yet been arrived at between the belligerent Powers in reference to the mutual release of medical personnel detained with prisoners of war in the respective countries.—Sir E. GREY replied: The answer is in the negative, and negotiations on the subject are still proceeding with the German Government through the United States Embassies in London and Berlin.

Medical Officers of the Territorial Force.

Sir CLEMENT KINLOCH-COOKE asked the Under Secretary for War whether he was aware that officers in the Territorial Force were excluded from obtaining increments of pay similar to those given to officers in the Regular Army; that a major in the Royal Army Medical Corps, Territorial Force, although having 10 years' service in the ranks, received 23*s.* 6*d.* a day, and must render three years' embodied service before being entitled to draw 26*s.*; and would he consider the advisability of removing what was regarded to be an injustice throughout the Territorial Force, and grant increments of pay to all ranks in respect of combined service rendered before and after embodiment.—Mr. TENNANT answered: Service in the Territorial Force before embodiment cannot be regarded as equivalent to continuous service in the Regulars, but the position of Territorial Force Royal Army Medical Corps officers with regard to pay and promotion is now receiving consideration.

The Use of Asphyxiating Gases in Warfare.

Mr. RONALD MCNEILL asked the Under Secretary for War whether his attention had been called to a statement, made by the official eye-witness with the British Army at the front on April 6th, to the effect that it had been learnt from German prisoners that the enemy were preparing to asphyxiate our men by means of poisonous gas stored under pressure in steel cylinders; whether this form of attack was, in fact, adopted by the Germans on April 22nd; whether any, and what, steps had been taken in the interval to protect our men against the effects of poisonous gas; and whether it was intended to allow the enemy to pursue this mode of warfare without employing similar expedients against him, after due notice, by way of retaliation.—Mr. TENNANT said in reply: I regret to have to inform the honourable gentleman that, notwithstanding their engagements under the Hague Convention, the Germans have on more than one occasion used poisonous gases in the manner described and have caused the death of numbers of our men by poisoning. In spite of rumours to the contrary, it was not believed that any Power which had signed the Hague Convention could be guilty of so heinous a breach of its solemn undertaking as the violation of the fundamental principles of that agreement by the introduction into modern warfare of such a method as this which may have far-reaching results. The latter part of the question is under consideration.

The Production of Morphia.

Mr. THEODORE TAYLOR asked the President of the Board of Trade what were the total amounts and values of morphia manufactured in the United Kingdom in each of the years 1910, 1911, 1912, 1913, and 1914; what were the amounts and values exported to China, Japan, and Hong-Kong respectively; and whether any provisions were in operation to secure the limitation of its use to medical or other legitimate purposes.—Mr. RUNCIMAN said in reply: There are no available statistics of the production of morphia in the United Kingdom, but I will circulate with the votes a statement showing the exports of morphia to China, Japan, and Hong-Kong. His Majesty's Minister at Peking has reported that the Chinese Government have announced their intention of putting the International Opium Convention into force as from Feb. 11th last, but His Majesty's Government have no information as to the intentions of the Japanese Government in this respect or as to any regulations in force in either country as to the use of morphia. As regards Hong-Kong, I understand that the Pharmacy Ordinance of 1910 imposes certain restrictions on the importation and sale of morphine.

The following statement (circulated with the votes) shows the quantity and value of morphia and morphia salts exported and re-exported from the United Kingdom to the countries specified in each of the undermentioned years:—

		Quantity. Ozs.	Value. £.
To China ...	1911	15	9
	1912	—	—
	1913	2,270	1,080
	1914	2,329	900
To Japan ...	1911	58,352	24,071
	1912	125,907*	68,650*
	1913	252,110	118,794
	1914	352,130	143,975
To Hong-Kong	1911	17,200	6,347
	1912	—	—
	1913	640	320
	1914	—	—

* Includes 1600 ounces, valued at £800, of morphia, &c., of foreign or colonial origin.

Note.—The exports and re-exports of morphia and morphia salts were not separately recorded in the trade returns of the United Kingdom prior to Jan. 1st, 1911.

Scottish Undergraduates in the Army.

Mr. MCCALLUM SCOTT asked the Secretary for Scotland whether he had considered the position of the students of Scottish Universities who were now serving in His Majesty's forces, and with regard to whom the universities had no power to modify their curricula; and whether he had received representations from any of the university courts with regard to this question.—Mr. MCKINNON WOOD answered: I have received a representation from the Glasgow University Court on this subject, which is receiving consideration.

WEDNESDAY, MAY 5TH.

Consultant Surgeons for the Navy.

Commander BELLAIRS asked the Secretary to the Treasury whether he was aware that the Board of Admiralty made an arrangement during peace time with eight members of the Royal College of Surgeons under which these gentlemen were each drawing £5000 per annum, though the circumstances of the war had not up to now interfered with their private practice; and whether this total expenditure of £40,000 per annum was reviewed by the Treasury before it was sanctioned.—Mr. ACLAND answered: I understand that these appointments were made in the first instance under a general authority given by the Treasury in 1908 for the appointment in the event of the outbreak of war of consulting surgeons for hospital ships at a remuneration not then specified. On August 14th the Treasury were informed of the appointments, and also that for administrative reasons five distinguished surgeons and one physician (with remuneration at the rate of £5000 a year each) were being employed at the Royal Naval Hospitals instead of being sent out on hospital ships. Upon representations from the Admiralty that it was essential that the services of these specialists should be available at the respective hospitals for the performance of operations at a moment's notice, the Treasury sanctioned the arrangements which had been made. The total number of appointments at £5000 a year is six and not eight as stated in the question. As regards the conditions of employment I am informed by the Admiralty that five of the six reside at and are performing daily duties at Haslar, Plymouth, and Chatham, and the sixth has to visit and perform surgical work in all the naval and auxiliary hospitals in Scotland. In addition the five who are resident at the English hospitals visit for consulting purposes other hospitals in which naval sick and wounded are being treated. It is only in any casual spare time that private practice can be followed.

Spirit Taxes and the Manufacture of Medicine.

Mr. FOSTER asked the Chancellor of the Exchequer whether he proposed in the suggested increased taxation of spirits to include in such taxation spirit used in the manufacture of medicine.—Mr. LLOYD GEORGE wrote in reply: I am considering this matter. The Board of Customs and Excise are in communication with the Pharmaceutical Society.

BOOKS, ETC., RECEIVED.

ALLEN, GEORGE, AND UNWIN, LIMITED, London.
Perpetual Peace. By Immanuel Kant. Translated, with Introduction and Notes, by M. Campbell Smith, M.A., with Preface by Professor Latta. Price 2*s.* net.

CHURCHILL, J. AND A., London.
A Manual for Midwives. By C. Nepean Longridge, M.D. Vict., F.R.C.S. Eng., M.R.C.P. Lond., and John Bright Banister, M.D., B.C. Cantab., M.R.C.P. Lond., F.R.C.S. Edin. Second edition. Price 3*s.* 6*d.* net.

ORMIGGINI, A. F., Genoa.
Significato Bio-Filosofico della Guerra. By Dr. William Mackenzie. Price Lire 2.

GREEN, W., AND SON, Edinburgh and London.
Encyclopædia Medica. Edited by J. W. Ballantyne, M.D., C.M., F.R.C.P.E. Second edition. Vol. I. Price 2*s.* net.

LAURIE, T. WERNER, London.
Painless Childbirth in Twilight Sleep. By Hanna Rion. Price 6*s.* net.

LEWIS, H. K., London.
Leper Houses and Mediæval Hospitals (FitzPatrick Lectures, 1914). By Charles A. Mercier, M.D., F.R.C.P. Price 1*s.* net.
Swanzy's Handbook of the Diseases of the Eye and their Treatment. Edited by Louis Werner, M.B., F.R.C.S. Irel. Eleventh edition. Price 12*s.* 6*d.* net.
War Surgery. By Edmond Delorme. Translated by H. de Méric, Surgeon to In-patients, French Hospital, London. Price 5*s.* net.

LIPPINCOTT, J. B., COMPANY, Philadelphia and London.
The Commoner Diseases, their Causes and Effects. By Dr. Leonhard Jores (Marburg). Authorised English translation by William H. Woglom, M.D., Assistant Professor in Columbia University. Price 16*s.* net.

LIVINGSTONE, E. AND S., Edinburgh.
Posological Tables; Appendix on Poisons; Index of Diseases and Medicines arranged according to their Actions. By W. Craig, M.D., C.M., F.R.S.E., F.R.C.S. Edin. Fourth edition. Price 1*s.* net.

MACMILLAN AND CO., London.
Human Physiology. By Professor Luigi Luciani. Translated by Frances A. Welby. With a preface by J. N. Langley, F.R.S., Professor of Physiology in the University of Cambridge. Vol. III., Muscular and Nervous Systems. Edited by Gordon M. Holmes, M.D. Price 18*s.* net.

METHUEN AND CO., LIMITED, London.
Health for the Middle Aged. By Seymour Taylor, M.D., F.R.C.P., &c. Price 1*s.* net.

PHARMACEUTICAL PRESS, London.
Supplement to the British Pharmaceutical Codex, 1911, including Additions, Alterations, and Corrections. Price 1*s.* net.

ROUTLEDGE, GEORGE, AND SONS, London.
A Chaplet of Herbs; Gatherings from the Early Herbals. By Florence Hine. Price 2*s.* 6*d.* net.

UNIVERSITY PRESS, Cambridge.
A Campaign against Consumption. Papers relating to Tuberculosis. By Arthur Ransome, M.D., F.R.C.P., F.R.S. Price 10*s.* 6*d.* net.

UNIONE TIPOGRAFICO-EDITRICE TORINESE, Corso Raffaello, 28, Torino.
Guida per il Medico-Chirurgo in Guerra. By Dott. Pietro Sisto, Aiuto e docente di Patologia speciale medica dimostrativa, and Dott. Ottorino Uffreduzzi, Aiuto e docente di Clinica Chirurgica Operativa, Regia Università di Torino. Two volumes. Price Lire 5.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, London.
Œdema and Nephritis: A Critical, Experimental, and Clinical Study. By Martin H. Fischer, Doctor of Medicine, Eichberg; Professor of Physiology in the University of Cincinnati. Second and enlarged edition. Price 21*s.* net.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

NASH, L. C., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer to the Shildon Urban District Council.

OVEREND, H. F., M.R.C.S., L.R.C.P. Lond., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Irlam District of the county of Lancaster.

RIORDAN, WILLIAM, L.R.C.S. Irel., L.K.Q.C.P. Irel., has been appointed Medical Officer for the Clonmoyle Dispensary District.

TAYLOR, A. J. T., has been appointed Resident Physician at the Edinburgh Dispensary.

TIBBLES, SYDNEY G., Temporary Lieutenant, R.A.M.C., has been appointed Specialist in Ophthalmology to Devonport Military Hospital.

WIGAN, CHARLES ARTHUR, M.D. Durh., M.R.C.S., L.S.A., has been re-appointed Chairman to the Portishead (Somerset) District Council.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

ALTON, HANTS, LORD MAYOR TRELOAR CRIPPLES' HOSPITAL.—Two Assistant Resident Medical Officers. Salary as arranged, with board, residence, and laundry.

ANGLO-SERBIAN HOSPITAL, Urnjatchka, Benja, Serbia.—Surgeon.

BETHLEM ROYAL HOSPITAL, Lambeth-road, S.E.—Assistant Medical Officer, unmarried. Salary £275 per annum, with apartments, board, and laundry.

BIRKENHEAD BOROUGH HOSPITAL.—Female Senior and Junior House Surgeons. Salary £180 and £150 per annum respectively, with board and laundry.

BIRMINGHAM GENERAL DISPENSARY.—Resident Medical Officer, unmarried. Salary £250 per annum, with apartments, attendance, &c.

BIRMINGHAM, ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES.—Assistant Resident Medical Officer, unmarried. Salary £250 per annum, with board, apartments, and laundry.

BOLTON INFIRMARY AND DISPENSARY.—Third House Surgeon. Salary £170 per annum, with apartments, board, and attendance.

BOURNEMOUTH, ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House Surgeon for six months. Salary £100 per annum, with board, lodging, washing, &c.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £120 per annum, with board, residence, and laundry.

BRIGHTON EDUCATION COMMITTEE.—Temporary Junior School Doctor. Salary at rate of £350 per annum.

BRISTOL, BEAUFORT WAR HOSPITAL.—Chief Resident Surgeon. Also Resident Physician and Surgeon.

BRISTOL GENERAL HOSPITAL.—Second House Physician, House Surgeon, Casualty House Surgeon, and Resident Obstetric Officer, all for six months. Salary at rate of £150 per annum, with board, residence, &c.

BRISTOL ROYAL INFIRMARY.—Throat, Nose, and Ear House Surgeon for six months. Salary at rate of £120 per annum, with board, apartments, and laundry.

BURNLEY UNION WORKHOUSE.—Resident Assistant Medical Officer or Locum Tenens. Salary £200 per annum, with apartments, rations, washing, and attendance.

BURNLEY, VICTORIA HOSPITAL.—House Surgeon. Salary £135 per annum, with residence, board, and washing.

BURY INFIRMARY.—Senior and Junior House Surgeons. Salary £175 and £150 per annum respectively, with board, residence, and washing.

BUXTON, DERBYSHIRE, DEVONSHIRE HOSPITAL.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—Resident Surgical Officer. Salary £160 per annum, with board, laundry, and apartments.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £200 per annum, with apartments (not board).

CARMARTHEN, JOINT COUNTIES ASYLUM.—Temporary Second Assistant Medical Officer. Salary at rate of £200 per annum, with board, lodging, washing, &c.

CHESHIRE COUNTY COUNCIL.—District Tuberculosis Officer. Salary £350 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician. Salary as agreed, with board, residence, and washing.

CROYDON BOROUGH HOSPITAL.—Senior Resident Medical Officer and Bacteriologist. Salary £200 per annum, with board, residence, and washing. Also Assistant Resident Medical Officer. Salary £150 per annum, with board, residence, and laundry.

CROYDON UNION.—Assistant Medical Superintendent of Infirmary and Assistant Medical Officer of Workhouse and Childrens' Homes. Salary £225 per annum, with usual residential allowances.

DENBIGH, NORTH WALES COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary £220 per annum, with apartments, board, attendance, and washing.

DERBY, MICKLEOVER COUNTY ASYLUM.—Medical Superintendent. Salary £550 per annum, with house, laundry, &c.

DERBYSHIRE EDUCATION COMMITTEE.—Temporary Female Assistant School Medical Officers. Salary £400 per annum, inclusive.

EAST SUSSEX COUNTY COUNCIL.—Female Inspector of Midwives and Child-Welfare. Salary £190 per annum.

ESSEX COUNTY.—Temporary Assistant Tuberculosis Officer. Salary at rate of £350 per annum.

EXETER CITY.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary £300 per annum.

GUILDFORD, ROYAL SURREY COUNTY HOSPITAL.—House Surgeon. Salary £150 per annum, with board, residence, and laundry.

HEMEL HEMPSTEAD, HERTS, WEST HERTS HOSPITAL.—Resident Medical Officer. Salary £150 per annum, with rooms, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HULL ROYAL INFIRMARY.—House Physician, unmarried. Salary £105 per annum, with board and apartments. Also Assistant House Surgeon. Salary at rate of £100 per annum, with board and lodging. Also Casualty House Surgeon. Salary at rate of £80, with board and lodging.

INDIAN MEDICAL SERVICE.—Ten Commissions.

INVERNESS, NORTHERN INFIRMARY.—House Surgeon. Salary £150 per annum, with board, &c.

IPSWICH BOROUGH MENTAL HOSPITAL.—Resident Medical Superintendent. Salary £400 per annum, with residence, washing, &c.

ISLAND OF SANDAY, Orkney.—Medical Practitioner and Vaccinator. Salary £100 per annum.

KING EDWARD VII SANATORIUM, Midhurst, Sussex.—Second Assistant Medical Officer. Salary £150 per annum, with board, lodging, and attendance.

LEEDS GENERAL INFIRMARY.—Resident Casualty Officer. Salary £125 per annum, with board, residence, and laundry.

LOCHGOILHEAD AND KILMORICH PARISH.—Medical Officer and Vaccinator. Salary £100 per annum.

LONDON FEVER HOSPITAL, Liverpool-road, N.—Assistant Resident Medical Officer. Salary £250 per annum, with residence and board.

MACCLESFIELD, CHESHIRE COUNTY ASYLUM, Parkside.—Junior Assistant Medical Officer. Salary £250 per annum, with apartments, board, laundry, &c.

MANCHESTER, ANCOATS HOSPITAL.—Two Residents.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Resident Medical Officer, unmarried, for six months. Salary at rate of £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Gartside-street.—Medical Officer. Salary £180 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—House Surgeon. Salary £120 per annum, with apartments and board.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy-square, W. Clinical Assistants.

MILE END OLD TOWN INFIRMARY.—Assistant Medical Officer. Salary £275 per annum, with board, lodging, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Northwood, Middlesex.—House Physician. Salary £150 per annum, with board, residence, and washing.

NEWPORT MENTAL HOSPITAL, Caerleon, Mon.—Temporary Assistant Medical Officer. Salary 5 guineas per week, with board, rooms, and attendance.

NORWICH, 3RD LINE DEPÔT, 2ND EAST ANGLIAN FIELD AMBULANCE, ROYAL ARMY MEDICAL CORPS (TER.).—Two Medical Officers. Pay and allowances as in Regular Army.

NOTTINGHAM CHILDREN'S HOSPITAL.—Female House Surgeon for six months. Salary at rate of £130 per annum, with apartments, board, and washing.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Honorary Surgeon.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—Temporary Surgeon in Charge of Out-patients.

PORTSMOUTH CORPORATION MENTAL HOSPITAL.—Assistant Medical Officer, unmarried. Salary £250 per annum, with board, apartments, attendance, and washing.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Temporary Assistant Physician. Salary £25 per annum. Also Temporary Surgeon for Ear, Nose, and Throat Department. Salary £25 per annum.

ROTHERHAM HOSPITAL.—Junior House Surgeon. Salary £125 per annum, with board, lodging, and washing.

ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, 234, Great Portland-street, W.—Resident Medical Officer.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Resident Medical Officer and Assistant Resident Medical Officer. Salary at rate of £110 and £90 per annum respectively, with board, residence, and laundry.

ST. PANCRAS DISPENSARY, 39, Oakley-square, N.W.—Resident Medical Officer, unmarried. Salary £300 per annum, with residence and attendance.

SALISBURY GENERAL INFIRMARY.—House Surgeon and Assistant House Surgeon, unmarried. Salary £100 and £75 per annum respectively, with apartments, board, lodging, and washing.

SHEFFIELD MUNICIPAL TUBERCULOSIS DISPENSARY.—Two Assistant Medical Officers. Salary £350 per annum.

SHEFFIELD ROYAL INFIRMARY.—House Surgeon and Assistant House Physician. Salary £100 per annum, with board and residence.

SHREWSBURY, ROYAL SALOP INFIRMARY.—House Physician. Salary at rate of £110 per annum, with board and apartments.

SOMERSET COUNTY EDUCATION COMMITTEE.—School Oculist and Medical Inspector. Salary £350 per annum.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Female House Surgeon. Salary £150 per annum, with residence, board, and washing.

TAUNTON AND SOMERSET HOSPITAL, Taunton.—Senior House Surgeon. Salary £250 per annum, with board, lodging, and laundry.

TIVERTON HOSPITAL, Devon.—House Surgeon and Dispenser. Salary £80 per annum and all found.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, &c.

WALSALL AND DISTRICT HOSPITAL.—Assistant House Surgeon and Anæsthetist. Salary £150 per annum, with board, residence, and laundry.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary at rate of £120 per annum, with board, apartments, and laundry.

WARRINGTON, LORD DERBY WAR HOSPITAL.—Resident Physician and Surgeon. Also Resident Pathologist and Bacteriologist.

WEST BROMWICH AND DISTRICT HOSPITAL.—House Surgeon and Assistant House Surgeon, unmarried. Salary £150 and £120 per annum respectively, with residence, board, and laundry.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, 73, Welbeck-street, W.—Clinical Assistants to Out-Patients' Physicians.

WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—House Physicians, Salary £120 and £100 per annum, with board, residence, and washing.

WHITECHAPEL DISPENSARY FOR THE PREVENTION OF CONSUMPTION.—Temporary Medical Officer. Salary £500 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Resident Medical Officer and House Surgeon for six months. Salary at rate of £150 per annum, with board, rooms, and laundry.

WORCESTER COUNTY AND CITY ASYLUM.—Assistant Medical Officer. Salary £250 per annum, all found.

WORCESTER GENERAL INFIRMARY.—Resident Medical Officer. Salary £150 per annum, with board, residence, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Birtley, in the county of Durham; and at Lurgan, in county Armagh.

Births, Marriages, and Deaths.

BIRTHS.

DAVIES.—On April 24th, at St. Olafs, Kingston-on-Thames, to Dr. and Mrs. H. R. Davies, a son.

ROBERTSON.—On April 27th, at Clarence-drive, Hyndland, Glasgow, to Dr. and Mrs. Berkeley H. Robertson, a daughter.

STEWART.—On April 26th, at Pinewood, Beckenham, the wife of F. W. Stewart, M.D., of a daughter.

WOODS.—On May 4th, at Waldemar-mansions, S.W., the wife of W. W. Woods, M.R.C.S., of a son.

MARRIAGES.

ATTWATER—HAWKINS.—On April 29th, at St. Margaret's Church, Westminster, Harry Lawrence Attwater, M.A., M.B., M.C., F.R.C.S., Temporary Lieutenant, R.A.M.C., to Nora Collingdon Hawkins, fourth daughter of Dr. and Mrs. Hawkins, of Hillfield, Broadwey, Dorset.

GUTTERIDGE—BAXTER.—On April 23rd, at St. Giles in the Fields, London, Lieutenant Bernard George Gutteridge, R.A.M.C., to Mary, second daughter of William Baxter, Esq., of Hilston.

MILNE—BROWN.—On April 24th, at West Coats Parish Church, Edinburgh, Robert Milne, M.D., M.S., F.R.C.S., to Alice May, second daughter of John Brown, Esq., Coltbridge-terrace, Murrayfield, Edinburgh.

YORKE—GREENING.—On May 4th, at the Wesleyan Church, Frodsham, by the Rev. H. Lefroy Yorke, M.A., B.D., father of the bridegroom, assisted by the Rev. William Stevenson, Professor Warrington Yorke to Elsie, only daughter of Mr. and Mrs. N. Greening, of Newlands, Frodsham.

DEATHS.

BELL.—William Bell, M.R.C.S., J.P., V.D., son of John Bell, M.D., of Uppingham, at Rutland House, New Brighton, in his 77th year.

BLAKISTON.—On May 3rd, at Ashington, Glastonbury, Arthur Alexander Blakiston, M.R.C.S., aged 63 years.

GOWERS.—On May 4th, at Ladbroke-square, W., Sir William Richard Gowers, M.D., F.R.S., aged 70 years.

LAWRANCE.—On May 1st, at his residence, Shaftesbury-road, Hammersmith, Frederick Lawrance, M.R.C.S. Eng., L.S.A., in his 85th year.

NEELY.—On April 25th, killed in action at Ypres, Hugh Bertram Neely, L.D.S., Guy's Hospital, Second Lieutenant, 1st Suffolk Regiment, aged 26 years.

SIMPSON.—On May 3rd, at Heslington House, Worthing, Walter S. Simpson, M.R.C.S., L.R.C.P., aged 63 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

HOSPITAL ARRANGEMENTS IN THE EIGHTEENTH CENTURY.

THE excellence of the hospital arrangements in the present war has excited the admiration of all who are interested in the alleviation of the sick and wounded among those who are fighting our battles at the present time. It is a contrast to what prevailed in the end of the eighteenth century. Facts may be gleaned from a pamphlet issued by the War Office in 1796 bearing the title of "Regulations for Improving the Situation of Regimental Surgeons and Mates, and for the Better Management of the Sick in Regimental Hospitals."

Up to that date the cavalry and infantry had allowances on account of medicines and hospital expenses, and these, with any other perquisites or gratuities, were to cease, after which medicines were to be supplied by the Apothecary General, and all expenses connected with hospitals were to be defrayed at the public charge. Each surgeon was to have 12*s*. per day in the cavalry and 10*s*. in the infantry. He was to have his choice of quarters according to his standing in the regiment, and in the time of war was to have the same baggage and forage money as captains. After he had put in 20 years' service he was entitled to an allowance of 5*s*. a day for life "upon production of certificates of good conduct from the commanding officers under whom he shall have served."

Surgeons' mates were in future to be designated assistant surgeons, and their pay was to be 5*s*. per day, but if on foreign stations or during war it was increased to 7*s*. 6*d*. per day.

Every regular corps was to be furnished with an airy, roomy, regimental hospital. In the event of the regiment not being in barracks, the duty of providing a place for a hospital fell upon the regimental surgeon. During an encampment a tent was allowed in aid of, but not as a substitute for, a hospital. Great attention was to be placed as to the pitching of it, and inside straw was to be worked up into mats and laid upon dry sand or gravel under each palliasse. The sides and floors of the wards were to be washed regularly, and if any contagious disease prevailed nitrous acid was to be evaporated every day. Every man was to be allowed the space of 5 ft. for his bed and to have a bed to himself. Great care was to be shown in the passing of recruits, and at convenient times and places they were to be inoculated against small-pox.

Each regimental surgeon was to be provided with a medicine chest, calculated for a corps of 1000 men, and once a year he had to make a return to the Secretary for War of what had been used during the 12 months, the said return to be accompanied by an affidavit taken before a magistrate that none of the medicines, as far as he knew, had been converted to private purposes or applied to any use but that of the regiment. Suppose an epidemic caused a run upon a certain medicine, the extra quantity could not be supplied till the prescribed formula had been complied with. If a doctor knew of a particular medicine which in specific cases would be beneficial, if it were not in the "Dispensatory" and he desired to use it he had to procure it at his own expense. Wine was only to be given when it was indispensably necessary, and it was only to be administered to the patient by the surgeon or his assistant as medicine or with food.

Each surgeon was furnished with four sets of hospital bedding for every hundred men on home service, and with six sets, while on foreign service, the other hospital necessities being in proportion. However, he was to furnish at his own expense what instruments were required, and these were specified as "capital" and "pocket." According to the list the set of the former consisted of amputating saw, or amputating saw with spare blade, metacarpel with spare blade, 2 amputating knives, 2 tenaculums, 24 curved needles, 2 Pettit's tourniquets, 4 leather tourniquets, 6 ligatures and handle for the same, 2 linen compresses, a trephine with 4 crowns, or 2 fixed trephines, lenticular and rugine, elevator and forceps, 1 perforator, brush and key, 6 scalpels, 4 catheters, 2 probangs, 1 silver probe, 1 bullet forceps, 1 polypus forceps, 2 trocars with additional canules, or with spring canules and the additional ones, 1 trocar for the hydrocele, 1 seton needle, 1 small razor, 1 small hone, 1 syringe, 1 key instrument for teeth. 1 forceps for teeth, 1 punch for teeth, 1 strong nippers for bones, thread for ligatures. The contents of a pocket case consisted of, 1 straight scissors, 1 curved scissors, 2 silver probes, 1 steel forceps, 1 scalpel, 1 spatula, 1 straight bistoury, 1 curved bistoury, probed point, 1 gum lancet, 1 caustic case, 1 director, 12 curved needles.

Regarding the "Dispensatory," a final word of caution was given. There was to be no "useless and extravagant demands for obsolete, expensive, and inefficacious medicines," and to limit the surgeons to the use of the most approved and powerful a list was drawn up for their observance. "By this plan the prescriber sees at one view what means he has to produce the effects he wishes, no time will be lost in looking over every article of medicine in his possession, his decision will be expeditiously made, and his practice will become more rational."

The advance of medical and surgical science has enormously altered the medical care of the army, and present-day sufferers are reaping the beneficial results. But the pamphlet from which we quote shows that in the army at the end of the eighteenth century provision was made commensurate with the knowledge and experience of the time; while the comparatively small numbers of men engaged made the problems presented far less severe.

THE DEFINITION OF A CONSULTANT.

To the Editor of THE LANCET.

SIR,—In reply to your correspondent "Enquirer" in THE LANCET of May 1st, I would remark that a consultant is a professional friend, adviser, and helpmate. There is the true consultant—a *rara avis*—who sees patients only in consultation with another medical man, and there is the pseudo-consultant, who has patients of his own and is called into consultation by reason of his experience or on account of a successful reputation, sometimes to assist and advise a friend, but usually at the request of the patient or patient's friends to give a second or independent opinion.

The rules that govern the conduct of a consultant are very simple, are well recognised by every member of the profession, but are incapable of strict observance, since patients are unacquainted with the rules of professional etiquette. A doctor should not attend a patient as an independent patient whom he has seen in consultation. This rule holds good if the introduction to the patient is through the doctor, but if, on the other hand, he is sent for with a view to his taking the place of the other doctor, he is justified in accepting the patient provided he acquaints and receives the consent of the doctor in attendance. This man is going to receive his dismissal under any circumstances, and therefore the second man is not doing him any injury. A refusal to attend is misunderstood by patients. Most medical men know that certain patients constantly are changing their medical advisers. I have a patient of many years' standing, and she frequently sees two or three different doctors in the week. I have seen her at 9 A.M., another doctor has seen her at noon, and a third doctor in the afternoon. Her idea is to have the advice I may give her corroborated by independent opinion. In all these years only one doctor has written to tell me of the fact that he had been called to see her. It cannot be thought that any of these doctors believed she was without a medical adviser, as she is a chronic invalid and a great sufferer.

I am, Sir, yours faithfully,

May 2nd, 1915. G. SHERMAN BIGG.

BUMBLEDOM AND HYGIENE.

IN spite of all efforts to popularise the principles of hygienic living ignorance and indifference still pervade, not only the masses, but those who are officially appointed to care for them—viz., boards of guardians. A case in point, according to a report in the *Carlisle News*, arose recently out of a complaint that two boys who were being boarded out by the Brampton board of guardians had been supplied with neither overcoats nor night-shirts. Lady Carlisle very naturally supposed that the deficiency, so far as regarded nightshirts at any rate, had only to be mentioned to be remedied; but apparently to her surprise the suggestion met with opposition on the ground that nightshirts were unnecessary, for people in the country were not in the habit of wearing nightshirts at all. Lady Carlisle, who obviously has much to learn about the mental attitude of bumbledom, insisted, with praiseworthy tenacity, on the hygienic importance of changing the sweat-soaked day clothes for fresh and aired garments on going to bed. This evoked the silly retort that the soldiers at the front did not change their shirts at night, in disregard of the fact that the soldiers at the front often have to stand for hours up to their waists in water, to go on occasion for long stretches of time without food or sleep, and to expose themselves to injuries and to many dangerous and unhealthy conditions which cannot be avoided under the circumstances, but which, if they were imposed on civilians in peace time, would evoke horror at their criminal barbarity. It was admitted in the discussion that even the inmates of the workhouse were not supplied with night clothing. The attitude of indifference received adequate expression from one of the members, who, according to the report in question, provoked laughter by the remark, "Give 'em the

shirts and let us change the subject." The motion to provide nightshirts, put by Lady Carlisle, was negatived by 10 votes to 5. The importance, whenever possible, of freeing the absorbent skin at night from unnecessarily prolonged contact with the toxic products of perspiration is a well-established hygienic principle and forms an integral portion of that cleanliness which is next to godliness; and the fact that individuals under pressure of temporary necessity may not always be able to comply with it is no justification whatever of its neglect as a practice of daily life under normal conditions.

AN ATTACK OF SEVERE ILLNESS APPARENTLY DUE TO EATING RHUBARB.

To the Editor of THE LANCET.

SIR,—Five days ago I was suddenly attacked with acute sickness and diarrhœa. Pulse and temperature went up rapidly, and I felt alarmingly ill. Next day these had subsided, but I had great strangury with bloody urine, which showed a considerable deposit of albumin. The other symptoms are subsiding, but the albumin remains. I am 69 years of age, and have had no illness of any kind for many years. My bladder and renal functions have always been perfectly normal.

In trying to account for this attack the only cause I can think of is that I partook rather largely of rhubarb pudding on two occasions a few days previously. The attack was very alarming and may, of course, leave some mischief of a chronic nature behind. Can it be due to oxalic acid known to be present in rhubarb? It would be interesting to know if any of your readers have had a similar experience.

I am, Sir, yours faithfully,

May 3rd, 1913. M.D.

SACRED RELICS AS CURATIVE AGENTS.

THE desire for relics—i.e., for memorials of those whom we love or honour or both combined—is one of the oldest of human passions, and that cures would be wrought by such relics was an instinctive belief. Perhaps the earliest instance on record of a cure wrought by relics is that mentioned in the Second Book of Kings, where in Chapter 13, v. 21, we read that a dead man was cast into the sepulchre of Elisha and revived on touching the prophet's bones. In the fourth century A.D. thousands of pilgrims went to the Holy Land and other places of the East to see the holy paces and such things as the instruments of the Passion, relics of the martyrs, Job's tomb and his dunghill. Concerning the last-named we learn from St. Chrysostom that many "took a long journey over the sea from the ends of the earth to see it and that from the sight thereof they derive every help and much 'philosophy,'" meaning probably by this last word a method of regular holy life. In the later Middle Ages the cult of relics became a scandal in many ways, witness Chaucer's description of the Pardoner with his collection of relics, such as Our Lady's veil and the glass of "pigges bones." To go back a few centuries, states and countries vied with one another as to which of them should own the more important relics, and the State of Venice in particular had a passion for relics. It began with the body of St. Mark, which was stolen or rescued from the infidels of Alexandria, in about 827, by means of a somewhat unworthy trick, and after the sack of Constantinople in 1204 she acquired, among other relics, the arm of St. George the Martyr, part of the body of St. John Baptist, and some of the Holy Blood. Later, in 1237, the Crown of Thorns, which had been in the sanctuary of Constantinople and had been mortgaged to a Venetian, was redeemed by St. Louis of France and deposited in the Sainte Chapelle. Numerous instances of cures wrought by relics are on record—for example, that performed upon a niece of Pascal, on March 24th, 1653, whose ulcer was touched and cured by a thorn from the Crown.

Some new and curious details concerning this widespread belief are furnished in a work recently published in Holland by Dr. A. Eekhof upon the Wandering Missionaries, or *Quaestuarii*, who sold indulgences, and during their peregrinations for this purpose wrought many wonderful cures by means of relics. These details are compiled from a mass of forgotten documents in the episcopal archives of Utrecht. The prophylactic virtues of greatest potency appear to have been those possessed by the relics of St. Hubert, patron saint of Utrecht Cathedral. One of these, his stole, is said to have been especially efficacious for the cure of rabies. This was only to be expected from St. Hubert's connexion with the chase. The treatment consisted in making a small incision in the skin of the victim's forehead and inserting therein a thread taken from the material of the stole. The ecclesiastics of Utrecht also claimed great success in relieving the sick by the use of relics of St. Martin of Tours which had been leased by the French clerics to their brethren at Utrecht, who found them a source of revenue. Almost equally efficacious were the relics of St. Anthony, which in 1079 were brought to Flanders by a Duke Jocellinus and placed in a monastery at Belle. Their application was most valued as a remedy for the plague and for "ignis sacer." Dr. Eekhof shows from the documents how the frauds practised by the religious in relation to alleged cures were frequently exposed, until the authorisation of such "quests" was forbidden by the Council of Trent in 1563.

COMPRESSED DRUGS IN THE GERMAN ARMY.

UP to 1897 the German military medical authorities used little packets of powders which had hitherto been supplied to their hospitals and dispensaries, but they wished to replace them by something less bulky and more readily conserved during the exigencies of war. They accordingly experimented with compressed tablets and with the necessary machinery for making them. Several different kinds of tablets were produced as a result, some satisfactory and others not quite so, some being liable to deteriorate and others to melt in hot weather, and there was also the difficulty of controlling the quality and quantity of the active ingredients in the compressed tablets. Some kinds of tablets were found too difficult to make and were purchased in the open market. A list of 18 different kinds manufactured was published in THE LANCET of March 10th, 1906, p. 703, and probably has been largely added to now. After the war is over we shall learn more of the success or failure of the treatment of the troops with the new methods and preparations, made not only by Germany but by the Allies. The diminution of bulk and weight have been the main considerations, and it will be discovered how far these factors are compatible with efficacy, convenience, economy, and durability.

RESPIRATORS.

WE have received from Messrs. Solport Brothers, of 188 and 190, Goswell-road, E.C., a model respirator which seems to be suitable for the present emergency among the troops and to fulfil the required conditions satisfactorily. The model (which has been submitted to the War Office) is called "Portia" No. 104, and is designed to be used wet, so as to cover the mouth and nose and absorb the deleterious gases. The towelling material used is specially absorbent, holding a considerable quantity of water, so that frequent renewal is not necessary, and at the same time it keeps perfectly porous so as not to impede the breathing. As a great advantage over the cotton-wool respirators it is claimed that the latter speedily become clotted into lumps after once or twice wetting and leave open patches through which the air is inhaled without proper filtration. The texture of "Portia" No. 104 respirators is said to remain uniform and constant, no matter how long the respirator is used or how frequently it is wetted.

THE PUBLIC SCHOOLS YEAR BOOK.

THE 1915 edition of this useful annual, edited by H. F. W. Deane, M.A., F.S.A., and W. A. Evans, M.A. (London: The Year Book Press. Pp. 774. Price 5s. net), now in its twenty-sixth year of publication, is the official work of reference to the Headmasters' Conference, and forms an admirable guide for parents and guardians seeking a suitable school for boys, giving, as it does, the names of the staff, with information as to mode of entrance, fees, prizes, scholarships, and so forth at the different public schools of the country. The sections dealing with the navy and army have been brought up to date.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 9.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 5th, 1915.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
April 29	30·090	E.	...	112	67	44	48	53	Fine
,, 30	30·090	E.	...	101	71	45	47	48	Fine
May 1	29·900	S.W.	...	110	67	48	51	58	Cloudy
,, 2	29·740	W.	0·02	102	59	46	47	50	Overcast
,, 3	30·184	E.	0·01	105	56	42	43	48	Cloudy
,, 4	30·020	E.	...	105	60	46	46	48	Overcast
,, 5	29·910	E.	...	101	71	48	52	56	Fine

The following magazines, journals, &c., have been received:—Canadian Medical Association Journal, Therapeutic Gazette, Practitioner, Journal of Mental Science, St. Bartholomew's Hospital Journal, South African Medical Record, Annales de Gynécologie et d'Obstétrique, Journal of Dental Science, Journal of Laryngology, Rhinology, and Otology, School Hygiene, British Journal of Children's Diseases, Candid Review, Dominion Medical Monthly, Journal of Royal Sanitary Institute, Canadian Practitioner, New Zealand Medical Journal, Medical Review, Archives of Internal Medicine, British Review, Middlesex Hospital Journal, Interstate Medical Journal, &c.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.
THURSDAY.—4 P.M., Election of Fellows. Papers:—Elizabeth A. Fraser and Prof. J. P. Hill: The Development of the Thymus, Epithelial Bodies and Thyroid in the Vulpine Phalanger (Trichosurus Vulpecula).—Elizabeth A. Fraser: Some Observations on the Development of the Thymus, Epithelial Bodies and Thyroid in Phascolarctos, Phascolomys, and Perameles (communicated by Prof. J. P. Hill).—Mr. J. H. Brinkworth: Measurement of the Specific Heat of Steam at Atmospheric Pressure and 104·5° C., with a Preface by Prof. H. L. Callendar (communicated by Prof. H. L. Callendar).—Mr. C. F. Jenkin and Mr. D. R. Pye: Thermal Properties of Carbonic Acid at Low Temperatures. II. (communicated by Sir A. Ewing).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
THURSDAY.
SECTION OF NEUROLOGY (Hon. Secretaries—T. Grainger Stewart, H. Campbell Thomson): at 8 P.M.
Annual General Meeting.—Election of Officers and Council for Session 1915-1916.
Clinical Meeting.
Members who desire to show cases are requested to communicate as soon as possible with Dr. H. Campbell Thomson, 34, Queen Anne-street, W.
FRIDAY.
SECTION OF OTOLOGY (Hon. Secretaries—W. M. Mollison, E. D. D. Davis): at 5 P.M.
Annual General Meeting.—Election of Officers and Council for Session 1915-1916.
Clinical and Pathological Meeting.
Cases and Specimens:
Will be shown by Mr. Richard Lake, Dr. Dan McKenzie, Mr. C. E. West, and Mr. W. M. Mollison.
Dr. Dan McKenzie: Note on Mastoid Grafting.
CLINICAL SECTION (Hon. Secretaries—Thomas H. Kellock, David Forsyth): at 8 P.M.
Annual General Meeting.—Election of Officers and Council for Session 1915-1916.
SATURDAY.
SECTION OF BALNEOLOGY AND CLIMATOLOGY (Hon. Secretaries—Charles W. Buckley, J. Campbell McClure): at 12.30 P.M.
Annual General Meeting.—Election of Officers and Council for Session 1915-1916.
2 P.M., Leave the Society's house for visit to Epsom College, &c.; for details see special card.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.
MONDAY.—8 P.M., General Meeting. Election of Officers and Council for 1915-1916 Session, &c. 8.30 P.M., Mr. D'Arcy Power: Short Demonstration on Early Books on Naval and Military Surgery from the Society's Library (illustrated by the epidiascope). Exhibition of a Selection of Some of the Society's Old and Rare Medical Works.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.
MONDAY.—8 P.M., Cantor Lecture:—Dr. D. Sommerville: Foodstuffs. (Lecture III.)

SOUTH-WEST LONDON MEDICAL SOCIETY, Bolingbroke Hospital, Wandsworth Common, S.W.
WEDNESDAY—9 P.M, Discussion on the Car in Medical Practice (opened by Mr. C. Ryall).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 10.30 A.M., Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Dr. Pritchard: Bacterial Therapy Department. Mr. B. Harman and Mr. Gibb: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Owen: Demonstration of Cases in Wards. 12 noon, Mr. T. Gray: Demonstration of Fractures, &c. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 11 A.M., Mr. Souttar: Demonstration of Minor Operations. 12 noon, Lecture:—Mr. Souttar: Abdominal Diagnosis. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women. Mr. Gibb: Diseases of the Eye.
THURSDAY.—9 A.M., Dr. Bernstein: Bacterial Therapy Department. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. D. Armour: Operations. Mr. B. Harman: Diseases of the Eye.
FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 10.30 A.M., Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Baldwin: Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.
SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.
MONDAY.—5.15 P.M.; Special Demonstration of Selected Cases.
THURSDAY.—5.15 P.M. Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.
TUESDAY.—3 P.M., Prof. C. S. Sherrington: The Animal Spirits. (Lecture II.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

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